AMERICAN BEE JOURNAL

Vol. LXIX—No. 8 Hamilton, Illinois, September, 1929 Monthly, $1.00 a Year

What Think You of Western White Sweet Clover?

By R. B. Willson

IF five years ago I had expressed my opinion of sweet clover honey it would not have sounded very well to the western beekeeper. In my ignorance and in my pride for our New York clover honey I had permitted to develop in my mind a strong prejudice against the white sweet clover honey of the West. The prejudice was built up partly on fear that this honey, being produced on a large scale with a large per colony yield, would furnish our home product terrific competition, an opinion doubtless shared by others in the East. I am glad to say I have lived to learn that instead of harming the eastern beekeeper, western white sweet clover has proved a source of real income to him. How this has come about I shall show later.

I entered the field of business three years ago with this prejudice well set. Very soon I began to see and taste many samples of this western white sweet clover honey. My prejudice began to weaken from then on, until now it is completely gone. And it was eastern beekeepers who confirmed my newly formed opinion of this variety of honey. It came about in this way:

I was invited a year ago last summer to address the Western New York Honey Producers' Association on the general subject of marketing. I preached an old sermon, but with new material. I know the western New York producers hoped they would be told that there was going to be a good market for their bulk honey in New York City at good prices To convince them that in order to get good prices for their honey it was necessary to sell it at home to the consumer in retail packages, I had a half dozen or so of their most prominent members taste certain honeys in unlabeled jars and classify them as to flavor alone as excellent, good, fair, or poor. The consensus of opinion was that western white sweet clover honey was excellent, and for this honey we were at the time paying 7½ cents a pound, delivered to New York. Reason enough for selling honey at home.

Later I tried the same experiment on the Connecticut Beekeepers' Association, with the same results. In neither instance did the beekeepers know in advance that this honey they classified as excellent was sweet clover honey. And so here is a product which improves immensely on actual acquaintance.

Honey crops in the East are uncertain as to quality and quantity. Frequently our crop is produced under humid conditions and our honey is thin. Much of what was formerly considered among our best white clover producing sections is now badly overrun with weeds whose nectar depreciates the quality of the honey produced therein. Sumac of eastern New York and New England is an uncertain yielder and by itself the fall honey of southern New York and New Jersey is dark and quite strong in flavor.

Let us see how western white sweet clover honey fits into these deficiencies.

1. As to flavor, it must be accepted good, and it is mild.
2. It is produced in very large and dependable volume.
3. It is among the whitest of honeys and can thus be used to lighten darker honeys.
4. It is generally of heavy body and can be used to give density to thin honeys which by themselves might ferment.
5. Its quality is uniform.

By elaborating a bit on point 5 above, I can now explain why I said this western white sweet clover honey has become a source of income to some of our eastern beekeepers. With this honey they can make dark honey light, strong honey mild, and thin honey can be given a heavy body; or combinations of these three things, which often need to be done, can be accomplished by blending. And just as important, the use of this honey in blending with our eastern own crop does not rob it of its characteristic flavor, for the sweet clover honey from the West is very mild. One ton of eastern honey can be easily stretched into two tons of the same honey with it, and it is advisable sometimes to stretch it even to three. This past year, to my personal knowledge four New York honey producers bought western white sweet clover honey in carlots to blend with their own crop. Many other producers are buying it in ton lots, and all of them are not only adding materially to their income by so doing, but are strengthening their business by improving the quality of their honey. The energetic bee man in most communities in the east will find that there is a consumer demand for honey to exceed his supply. His cue is western white sweet clover honey.

Has it a fault? Someone may wish to rise and say that it is quick to granulate. It is, but its granulation or candying properties should be listed with its virtues, for it crystallizes smooth, hard, and pasty.

The beautiful crystalline mass into which this honey usually forms lends itself better than any other to the making of the product which is variously known as honey butter, honey cream, cream of honey, and Hunny Whip (the registered brand name of the John G. Paton Company). These are truly delicious products, but difficult and costly to manufacture on a commercial scale. The patented whipping process breaks down the crystals to minute size, thus giving the honey more chance for immediate expression when it is placed on the

tongue than the ordinary candied honey, and, more important, it renders it soft and easy to spread.

We want to avoid giving the impression that **all** sweet clover honey is excellent, for it is not. To guess, I'd say that half of the crop could be graded as such, the other half being from good down to poor. But whole states produce honey from sweet clover that is unquestionably excellent in quality. Wyoming and Montana lead in this respect, and much of the honey from Idaho, Utah, Nevada and Colorado is also excellent. That which is being produced in the Red River Valley in North Dakota is also excellent—of delightful flavor and water white in color. No wonder the number of colonies has increased tenfold in a few years in this great beekeeping region.

And the world thinks well of this honey known to commerce as western white clover. Bear in mind that on world markets American honey has to compete with honey from the ends of the earth: Chile, Siberia, New Zealand, Hawaii, etc., etc. In England, where true worth in honey is appreciated, our western white clover honey is highly prized and purchased by hundreds of tons annually for packing in its natural candied condition in glass jars. This, too, is in the face of keen competition from some of the finest quality real white clover honey produced in the world, from Ontario, Canada.

In Germany, where merchants insist they are too poor yet to pay high prices, they are still purchasing our western white clover honey in tremendous quantities, although our prices last fall and again this spring underwent a substantial revision upward.

In Italy, where usually enough honey is produced to take care of their requirements, last year they suffered a honey crop failure. We submitted samples of American honeys for the organized producers there to use in substitution of their own honey, and western white clover was selected as being best suited for the Italian palate, so well trained away from food without character.

Here in the United States, western white clover honey, in spite of its granulating properties, now makes up fully 50 per cent of the honey packed in glass and small tins. Properly heated and blended with sage or tupelo honey, it will remain liquid long enough for commercial purposes.

Sweet clover is the most important honey plant in the United States. Probably it is as important in pounds of honey as all other honey plants combined Certainly without it we would have no semblance of a honey industry in our country today.

New York.

Points in Sending Queens by Mail

By L. R. Stewart

I have noticed a few queens being shipped via air mail. I rather doubt if queens are admissible to the air mails unless accepted at the risk of the sender, as they are perishable, and nothing liable to damage by freezing is acceptable, for, as you must know, it is very cold at the height mail planes fly. Even though the cold did not immediately kill the queens, it probably would affect their future usefulness, which would be more serious. So I rather question the advisability of sending queens by air mail. A good queen tomorrow or even the next day is worth a dozen dead or incapacitated ones today.

The request for queen shipments to be handled outside of mail bags is another thing I have noticed and doubt the benefits, if any, to be gained. All queens are given first-class service, and as a rule when they are received in the mails they are left on the sorting table until just before the pouch (all first class mail is carried in pouches; papers, etc., in sacks) is locked for dispatching. Even though they were placed in pouch upon receipt, as a rule the pouch is not "locked out" until the last minute before dispatching, and it is usually unlocked again in a few minutes, as close connections and rapid transit is the very essence of the mail service. However, if they should remain in a locked pouch for some time, I doubt if it would be injurious, as mail bags are not so closely woven but that they would receive plenty of air, and the lack of air would be their only possibility of injury. I'm certain it would not be as injurious as being exposed to all kinds of temperature while in transit between trains or post office and train as they are when handled as outside mail.

But one thing queen breeders should do is to request the proper authorities to issue orders that queens should not be delivered from rapidly moving trains. This is not practiced, but it is sometimes done, and, while it may not at the time kill the queen, she will be worthless and soon superseded.—U. S. Postal Service.

Ames Woman Desires Bees Kept at Home

This is the title of a clipping sent to us by a subscriber and circulated by the George Matthew Adams Service. It concerns Mrs. Fannie McMillin, of Ames, Iowa, who is trying hard to get E. M. Shephard to keep his bees at home or else "don't keep bees at all."

The clipping goes on to say: "Because the Shephard bees frequented her garden, sat on her freshly washed clothes, made walking in the McMillin yard an adventure and bothered her in many ways, Mrs. McMillin sued Shephard for $100.00 and asked the court to enjoin Shephard from keeping bees."

She had no luck, so took her complaint to the City Council, who passed the buck to the chief of police, and he, so far, has utterly failed to make Shephard's bees stay close home.

In commenting on it, our subscriber remarks: "I am interested in this, as I recently moved my apiary to green pastures in the country because of a complaint that my bees, in taking water at a neighbor's fountain, had stung and killed the goldfish in his aquarium. When asked for the proof of the statement, he said he found their stingers in the fishes' mouths. This is the first time I knew bees could swim."

A Bee Man.

Low Prices—Why So?

New choice white clover honey is selling here as low as 10 cents a section. It started in the classified columns of our daily paper at seven pounds to the dollar and is now offered at ten pounds to the dollar. When it goes lower than this I am afraid bees will get discouraged and stop bringing it in.

There is a wonderful honeyflow here, the best in my experience with bees.

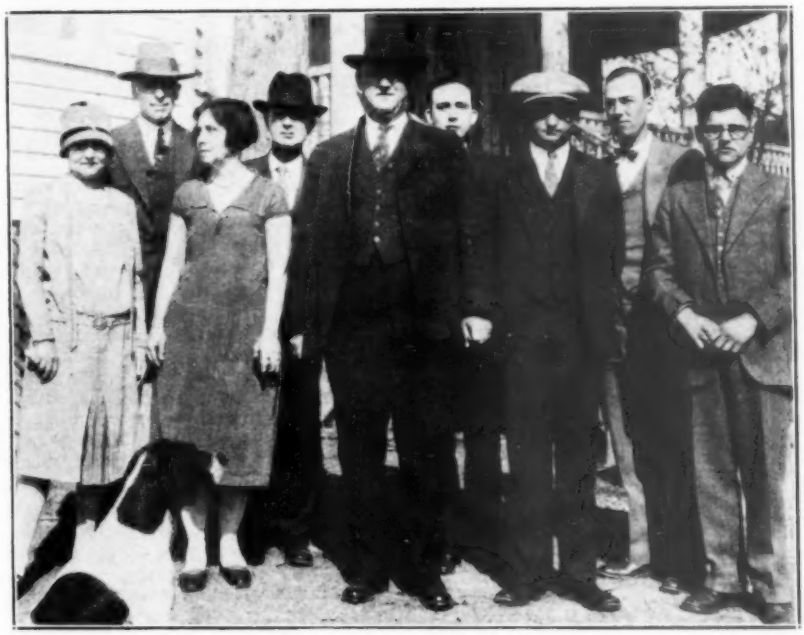
Boone, Iowa.

Honey on the Sly

The story in the December number of the Journal by Jes Dalton, about the stingless bees, was a good one. It reminds me, by the way, of a somewhat similar story which a neighbor of mine told me once about his two little boys. This man is a beekeeper of the soap box variety and having only occasionally a few "stands" of bees. His two young hopefuls had once contrived a scheme to treat themselves to some illicit sweets. They got them each a piece of wheat-straw, inserted them in a crack in the "hive" and punched them well into the combs. Then, applying their mouths to the exposed ends of the straws, they extracted by suction what could be got by this means. This, of course, was done on the sly, and the little miscreants might have been never detected if their little sister had not told on them. She was at first an eager participant, till one day the boys rudely denied her the privilege, when she promptly turned traitor, whereupon papa's heavy hand put an effective stop to the mischief.

Charles Hofmaster,
Oklahoma.

INTERESTING PERSONALITIES



Alabama Bee Men

The photo shows a group of friends who met at dinner at the home of Jasper Knight, Hayneville, Alabama, one balmy day in February. The business of shipping package bees and queens is an important one in that section of the South. Three extensive shippers are shown in the picture, J. M. Cutts, Jasper Knight and W. E. Harrell. Mr. Ruffin is connected with the College of Agriculture, and Mr. Deyell is a representative of the A. I. Root Company. One of the ladies is the wife of the Field Editor of this magazine, who happened to be behind the camera when the picture was taken.

The greatest attraction of the Field Editor's job is the many interesting friends whom he meets.

Honey and Heart Failure

Clipped from Pharmacal Advance, Vol. 9, No. 98, New York, and written by G. N. W. Thomas, Edinburgh, Scotland

It has been said that the main role of carbohydrates in metabolism is to provide fuel for muscular energy. I desire to call attention to the great value, which I believe it to have, of honey as a restorative in health and sickness.

When muscular energy is required, and particularly after emotional stimulation of the sympathetic nervous system, there is found to be an increase of sugar in the blood. The various sugars found in the body may be classified among the mono- or the poly-saccharides: blycogen belongs to the latter group, and is apparently a storage product in muscles as well as in the liver. The energizing effect of sugar on muscular effort has been proved by Schumberg's experiments with the ergograph. Muscle in action, it has been computed, can consume three and a half times as much sugar as muscle at rest. Starling found that the normal heart used up sugar at the rate of about four milligrams per gram of heart per hour. Nectar, which bees collect from various flowers, contains a special sugar which undergoes some change to honey.

The question is whether honey does not contain some special vitamins, and if boiling destroys certain vitamins, then, presuming honey contains vitamins, there is an advantage in honey over commercial sugar. If sugar, and preeminently honey, be the most potent fuel to provide energy for the muscles, should we not remember to give it for that all-important and most vital muscle of all—the heart, which gets no complete physical rest; other muscles, yes, but for the heart no respite—until "the tale is told."

The claim is made that honey seldom gives rise to fermentation in the alimentary canal, since the dextrose and levulose, being non-saccharides, are absorbed so rapidly that there is little time for bacterial action. This would commend it for infants and children, especially to ward off deficiency diseases. The fatty acid content is of more or less value in stimulating peristalsis and digestion. It seems, therefore, that Dr. Thomas's plea for the considerate and extended use of honey has sound biochemical basis.

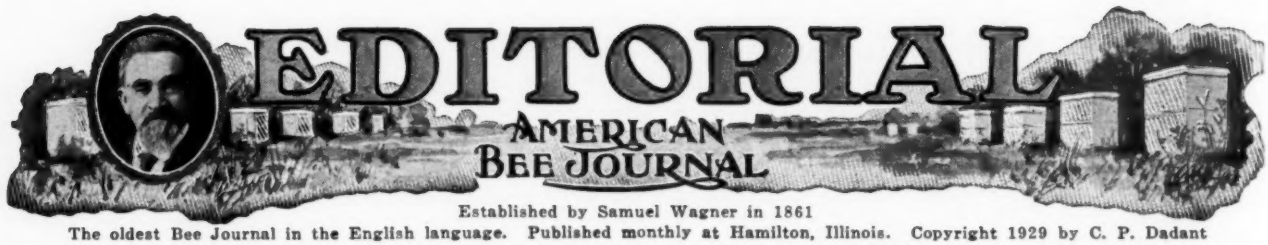
While honey has been used in medicine as an excipient for gargles and in ointments and hand lotions, its value, however, both as a food product and as a preservative to other food material, has been used advantageously in phyllamin.

No Vitamins in Honey

Mr. E. Hoyle, of the biochemical department, Lister Institute, London, has recently investigated the vitamin content of honey (Biochemical Journal, Vol. 23, No. 1, pages 54-60), tests for vitamins A, B-(1), B-(2), C and D being included in the research. Rats were fed on a diet free from the vitamin to be tested (in the case of C guinea pigs were used), and comparison was made of three sets of animals, one set receiving the vitamin-free diet only, one set having some honey added to it, and a third set having the deficiency in the diet made up by the addition of the vitamin in question, in suitable form. This was done for two honeys, one a granular honey of West Indian origin, the other a sample of white clover honey gathered at Rothamstead Experimental Station and taken straight from the comb as required for use.

In no case did the animals receiving honey in addition to the deficient diet differ in condition from those receiving the deficient diet only, but exhibited the same signs of vitamin starvation as these others (the "negative controls"). The set of animals ("positive controls") which were supplied with the vitamin omitted from the diet, on the other hand, grew normally (or remained healthy, as the case might be).

Mr. Hoyle reviews briefly the literature of the subject, most of which appears to refer to work done before the recent great progress in vitamin research. This literature, as far as it goes, does not support the view that honey contains any appreciable quantity of vitamins; so that Mr. Hoyle's results do not come as a surprise to those familiar with the progress of honey research. Many vendors of honey have, however, been in the habit of advertising their wares as containing vitamins. This, in view of the above results, we beekeepers, as honest and truthful producers, are plainly no longer entitled to do, for the matter can now be considered to have been placed beyond doubt. A. D. B.



Established by Samuel Wagner in 1861
The oldest Bee Journal in the English language. Published monthly at Hamilton, Illinois. Copyright 1929 by C. P. Dadant

Entered as second-class matter at the Postoffice at Hamilton, Illinois. C. P. Dadant, Editor; Frank C. Pellett and G. H. Cale, Associate Editors; Maurice G. Dadant, Business Manager.

SUBSCRIPTION RATES:

In the United States, Canada and Mexico, $1.00 per year; three years, $2.50. Other foreign countries, postage 25 cents extra per year. All subscriptions are stopped at expiration. Date of expiration is printed on wrapper.

Quarantines

The appearance of the Mediterranean fruit fly in Florida has caused a situation which is very serious for the people of that state. This pest is very destructive to the fruit crops of warm countries, and the Government is determined to stamp it out at all cost, if possible. Wherever the insect is found a quarantine zone is established with a radius of one mile. Within this zone all fruits, shrubs and vegetables on which the insect breeds are promptly destroyed. Since the host plants include such fruits as oranges, figs, peaches and guavas and a long list of vegetables, including beans, the result is disastrous to those living in the neighborhood. Surrounding this zone is a second zone nine miles in extent, within which all ripe fruit and vegetables must be destroyed after a certain date, so that there will be no place for fruit flies coming from the first zone to lay their eggs.

To enforce such a quarantine requires a large force of men, and every road is guarded and every passing traveler examined to make sure that he carries no fruit which may spread the pest. The cost of quarantine, together with losses to farmers within the area, will amount to millions; yet it is probable that at this early stage the fruit fly may be stamped out as was the foot and mouth disease. If so, the cost will be small compared to future losses after the insect has spread over all the warmer parts of America.

Had such methods been adopted in dealing with brood diseases of bees when first they appeared, how quickly could this problem have been solved. Now that they are present in practically all important beekeeping regions, there are serious doubts in the minds of leaders in the industry whether they can ever be completely eradicated.

The attempts to eradicate the fruit fly from Florida will be watched with interest.

The Horse Must Go

When the automobile came into the market at a price which made its use practical, beekeepers were among the first in the agricultural field to discard horses for autos. It seems but a few years ago that we all depended upon horses for reaching outyards. The danger of stings was probably the most important factor in deciding the average bee man to use a car instead of the horse. So many new power-propelled machines are coming into use on the farms that it seems that within a short time few horses will remain. It is now common in Iowa to see a farmer with a gas-driven machine cultivating two rows of corn each time across the field. One in use on a farm near the writer works so fast that it does three times as much work in a day as a team of horses. With the present day demand for speed in every field of endeavor, the horse is too slow and too expensive.

Neat Packages

A visit to one of the new grocery stores in any city is interesting just to see the variety of foodstuffs offered for sale. When the housewife comes in, looking for something for her table, she finds a bewildering variety. There are hundreds of different products, many of which are already prepared for serving. Our homes are changing along with business. No longer is the wife and mother content to spend her days cooking and patching. Often she is a wage earner along with her husband. She buys in small packages for her immediate needs. Products which are not put up in attractive packages have little chance to gain her attention. The packing and selling of honey has become a specialty quite distinct from production. Either we must produce in a sufficient volume to sell at wholesale to bottlers or we must have selling associations to handle our crops. Honey can be sold in large quantities, but it must be in line with the present day trend of living, and few producers are prepared to market in this manner.

More Bee Pasture

According to 1929 reports of crop acreages returned by assessors, Nebraska now has more than a half million acres of sweet clover. Nebraska climate seems especially adapted to sweet clover, and it yields nectar abundantly there. If the estimate of one colony per acre of available sweet clover, producing one hundred pounds of surplus honey, is correct as possible returns, from this plant, Nebraska alone is now in position to produce fifty million pounds of honey. There is every reason to believe that the plains region between the Rocky Mountains and the Missouri River will soon produce an enormous amount of good honey.

Get the Bees Ready for Winter

Now is the time, in the central and western regions, to get the bees well provided for winter. With the large hives and the production of extracted honey, beekeepers are apt to have too much space in the upper story, unless the season is extra good. We have always found it necessary to reduce the space to what the bees can probably fill, so that there may be an ample supply stored in the brood chamber.

In the smaller hives, eight- and ten-frame Langstroth, where the beekeeper expects to supply a food chamber above the brood, this has less importance. But a matter of great moment in any case is to see that the honey provided for winter is ripe and of good quality. Honeydew has always proved dangerous in our apiaries. So is unsealed honey, for when the combs are not sealed the honey is likely to absorb moisture and become watery. Indeed, we have seen unsealed honey gather so much moisture in the winter that it overflowed out of the cells. Where the bees are confined to the hive for a month or more, during the extreme cold days, unsealed honey is likely to cause diarrhea. The bees overload their intestines and the result is disastrous.

If we have to remove some undesirable honey, it may become necessary to feed the bees sugar syrup. This should be made of two parts of sugar to one part of water and 10 per cent of honey added to the liquid before feeding it to the bees. This proportion was recommended by Doolittle, over and over again. I believe one could find this recipe from him, ten years in succession, published in the American Bee Journal. If the feed is given just after the end of the fall crop and not too fast, so that the bees may have time to invert it, it is sure to prove satisfactory.

Some beekeepers do not like to feed slowly, because they say that the bees breed and spend a great deal of the food which they should otherwise store in the combs for winter. That is quite true. But are we to dislike

a number of young bees reared at the end of the crop? I believe that it is a good thing and that it may prove to be a good preparation for the crop of the following season. The importance is to not carry this breeding over too late, especially if the colonies are to be wintered in the cellar. But we have a great deal of time between September and the middle of November, when everything should be at end and the bees quiet.

Conventions

A few years ago there was much enthusiasm at the bee meetings, and in some cases the attendance was large. Of late there is a tendency toward diminishing attendance and general lack of interest. In some states there is talk of doing away with the winter meeting except for the board of officers, who will get together to discuss plans and policies for the organization. Instead of the winter convention it is suggested that a summer assembly be held, when weather is good and the journey can be made by auto.

Folks go to conventions to make new acquaintances and learn new methods relating to their business. Of late the conventions have become rather routine, with about the same subjects and the same speakers year after year. If interest is to be revived, something new and fresh must be offered. A program built along new and original lines, with everything different from that offered in other years, would still draw a crowd.

In Switzerland, for instance, the French-Swiss Romande Society held a general assembly. on July 6 and 7, numbering over two hundred beekeepers.

They have no cut-and-dried program. They have, of course, some actual and interesting speeches on beekeeping subjects. At that meeting they had Dr. Morgenthaler, the Liebfeld scientist, and a number of leading apiarists of Switzerland, but they had also music and capable singers and an orchestra, besides the rendering of songs to celebrate the honeybee.

Banquets were held in some of the best restaurants of the region of Gruyere. Excursions were arranged in the Valley of Jogne. Apiaries were visited. Many ladies were present.

We might call the attention of our readers to the fact that the two days of the above mentioned meeting were Saturday and Sunday, July 6 and 7. The Europeans do not entertain the Puritan views of our America concerning Sunday. They do not believe that any harm is done by holding meetings, on Sunday, other than church meetings, and this view is held by Protestants, Catholics and free-thinking people as well. During that Sunday a number of the members visited the men's convent of the Chartreuse of Valsainte, where bees are kept also. The apiary there is said to be a model of its kind.

With our plentiful means of transportation, a beekeepers' excursion might be arranged oftener than we have them at present and with a greater variety of entertainment. It is not absolutely necessary to hold strictly to dry discussions of management.

The Drones. Why So Many?

Every now and then we find articles in some bee magazines upholding the drones and their usefulness. In the August number of "L'Apiculture Belge" a full page is devoted to their defense. They say that the drones help to keep the hive warm. Then why do the bees kill them at the least lowering of the temperature, when the honey crop appears to be delayed or stopped? If the drones were needed to help keep the brood warm, they would be reared first and would not be killed till the end of the breeding season.

But still it requires warmth to produce them, and a larger number of workers may be reared in the same space and with the same amount of warmth.

Then why do the bees rear so many? If we stop to think a moment, we will readily see that it is a provision of nature; for nature is very lavish in the means of reproduction. As colonies in a natural condition are often very far apart and in very small numbers, it is necessary that every colony, in the wild state, be supplied with enough drones to cover the locality so that the young queens, of which there may be only one or two, be able to meet one of them.

So nature has provided for every colony to produce several thousand drones. But when we keep bees in apiaries of fifty to one hundred colonies in one spot, the drones of one or two of these colonies are sufficient to provide full means of fertilization for the young queens. Besides, we can use our judgment in the selection of the races that we wish to breed from and can remove the drone-comb—as much as possible—from any colony or colonies from which we do not wish reproducers. There are always some drones reared, in any colony, because there are small patches of drone-combs which escape our notice, in corners, and the queens, at the time of swarming, seek drone-cells very persistently. But what we object to is the large patches of drone-combs where drones are produced by the thousands.

They say drones eat little if any honey. But even granting this assertion, the drones cost a great deal to produce, at a time when the colony needs to rear many workers.

Therefore, let us keep the drone-comb as much as possible out of all colonies except those which we desire to use as breeders. A colony to produce queens and two or three colonies to produce drones, arranging it so that the drones and the queens will not be from the same parents.

This is the rational way to keep bees. It is very easy, in spring, to remove the drone-comb and replace it with worker-combs. And if we let the bees build combs, let them build it on comb foundation, so that we may be sure that it will be all worker-combs. There will be a few drones in each hive anyhow.

Extracting. Care of Combs

In our middle and western states, some beekeepers find it a problem to care for the extracted combs after the crop. It has been our practice to return them to the bees after extracting, so that they may clean them and put them in shape for the next crop.

It is important, however, not to leave them on the hives too late, as some colonies establish themselves in these combs and may starve if they are left on until cold weather. We have found it advisable to remove them after a few weeks and before any cold weather sets in. In our southern states the conditions are quite different and many people leave the supers on quite late.

Protection from moths is of some importance. The moths are most numerous at the end of the season. Evidence of this is found in the fact that they breed three times during the year, the first breeding being of very small numbers, but the second and especially the third produce a large number of worms. For that reason great care must be used in keeping the honey house free of moths. Burning brimstone in large metal vessels is the best way to avoid destruction of combs by moths. In cold localities, where heavy frosts begin early, an unheated honey house is soon made safe by the temperature.

It is hardly necessary to warn beekeepers against storing combs away containing possibly the germs of foulbrood. Such combs should be carefully melted and rendered into beeswax. In this, as in many other cares, we prepare for safety for the coming year.

Bee Stings for Rheumatism

There is evidence that for certain kinds of rheumatism bee stings offer an effective remedy. There are also reports of failure to find relief.

Illinois beekeepers recently held a meeting at the Roy Annear apiary at Mulkeytown. Among those present was E. S. Silkwood, who had been helpless with rheumatism for more than ten years. A few months ago bee stings were suggested as a means of possible relief. Immediate benefit was noticed and he has continued to submit to numerous stings three or four times a week since last November. He estimates that he has had about eighteen hundred stings since that time. He is now at work and appears to be in good health. The fact that he had been down for so long a time and found such immediate relief when stings were applied leaves little doubt that the stings were the cause of his cure.

There are numerous reports of great benefit to those suffering with rheumatism when stings are applied, but few cases where the results are so striking and so convincing as with Silkwood.

The Importance of Labels

By Natt Noyes Dodge

A LABEL is to a package of honey what paint is to a house, what a name is to a family, and what a license tag is to an automobile. It is an indispensable part of the equipment of any beekeeper who packs his honey in containers to enter the home of the consumer. It is the means whereby the prospective purchaser gains his first impression of the goods; the "best foot" of the product which should always be put forward. This applies in particular to honey handled through the groceries, for if several brands of the commodity appear upon the shelf, the purchaser will choose, other things being equal, the one with the most attractive label. Although a silent salesman, it is a powerful one. A label first makes an appeal by creating an impression. It inspires confidence through longer acquaintance, and familiarity makes it a companion. For this reason a label once introduced should be changed only under the stress of necessity.

Not only does a label serve as a guarantee of quality, and act as a means of attracting and holding the favor of the purchaser, but it is an index to the quantity of honey which the package contains. It is required by law that the net weight of the contents of every package, except such as are weighed out in front of the purchaser, shall be plainly marked upon the container. In many states net weights stamped or printed upon the cap, cover, or any portion of the package which it is necessary to remove in order to reach the contents, are not legitimate.

In choosing a label there are several things which the beekeeper should consider. In the case of glass packages, the label should be small enough to permit the honey to show up to best advantage, for honey, particularly a light amber article properly packed in clear, white glass containers, lends itself admirably to display. A safe rule is to have a label which will cover no more than one-third of the space in view. Oblong or rounded-corner labels are preferable to those which are square in shape. The "cut out" type of label, one which is irregular in outline, adds "class' to the package. For tin containers, the label should be as large as possible in order to cover the metal. Almost any label is preferable to the naked tin. Furthermore, it adds an appearance of neatness and creates an impression of uniformity when the tins are massed for display. Neatness inspires confidence in the mind of the prospective purchaser, for he unconsciously feels that the packer who chooses a neat label has exercised the same taste for nicety in producing and putting up the product.

After the size and shape of the label are decided upon, the next step is the choosing of a trade name. This is perhaps the most important and the most worthy of thought of any item which has to do with labeling. In the first place the name should never be misleading. The practice of using a brand name which conveys to the observer an impression of a better or supposedly more desirable product than the package actually contains is a favorite one among commercial packers, but it is

Left: Lithographed label
Right: Printed label
Above: Tin only partially covered

clever deception. There are plenty of dignified, attractive and appealing names which may be chosen without resorting to an attempt to fool the public. For this reason the writer does not believe in the use of the name of a flower on the label. "Wild Rose Brand Pure Honey" may make a strong appeal to the purchaser, but he instinctively feels that the honey was gathered from the blossoms of the wild rose. Even in the case of the actual nectar-bearing plants such as alfalfa, white clover, tupelo, and the like, even though it be used in districts where the name may indicate the actual source of the majority of the honey, some unexpected condition may arise whereby the producer may be forced to buy and pack honey from some distant region, and at once his label becomes a deception. Perhaps the safest way is to choose a name totally unrelated to flowers. The wise producer incorporates his own name with the brand, thus automatically placing his signature upon every package as a guarantee, at the same time giving himself business publicity. "Morgan's Honey," "Drexel Brand," and the like, are typical examples. Although some readers may disagree, the writer's experience has led him to believe that it is a good policy to have the word PURE appear on the label, for there is even yet considerable popular suspicion of the adulteration of honey, and the absence of this word often arouses mistrust which loses a sale.

For the design and color scheme, it is usually advisable to consult a commercial artist, although very attractive labels may be drawn up by the beekeeper himself. Simple patterns are almost always more attractive than elaborate ones, and a plain label is sometimes as satisfactory as one of many colors and ornate figures. By using a paper of one tint and ink of another, a pleasingly neat label may be set up in any print shop. If more complicated design or pattern of several colors is desired, it will be necessary to have a drawing done and cuts made. Where business capital is available, the lithographed or "varnished" label is often used. This type of label permits the use of beautiful designs with color variations and a glossy finish, but the expense of the first order will take the packer's breath away. Some bee supply houses carry a line of stock labels from which the producer may choose one and have his name printed upon it. In this way he may obtain a neat, well-designed, multicolored label at very small cost; the fact that other beekeepers in different sections of the country are also using it in no way lowers its value to him.

Printed labels may be obtained upon gummed paper, which merely requires moistening to make them adhere firmly to the glass. Lithographed labels and some of the printed ones demand the use of paste. In labeling glass, the operator seats himself at a table with his labels and jars of honey within easy reach. The labels should be stamped with the net weight before applying, for if one size of label is to be used upon several sizes of jars it is not practical to have the various net weights printed upon them. Gummed labels are best moistened by pressing the gummed side upon a folded damp cloth. The use of ungummed labels does not require two persons, but where two are available the work is greatly facilitated, if one applies the paste with a small brush while the other places the labels on the jars. If one must do the work alone, a piece of plate glass over which is spread a thin film of paste to which each label is lightly touched will prove a great time saver. In the case of tin, the label should be long enough to go entirely around the

Fancy jars and lithographed tins are of great value where an elite trade is encountered

pail and lap over about half an inch. A little tin paste, which may be obtained from beekeepers' supply houses, is applied to one end of the label on the side which goes against the metal. A similar amount is placed on the opposite end on the same side. The label is then slipped up under the ears of the pail, the first end pressed firmly against the tin, and then the label stretched tightly about the pail, the other end lapped over the first one and pressed tight. Although some beekeepers label their containers before filling, it is safer to do this work afterward, as many labels become loosened by the expansion of the metal under the influence of hot honey, and others are spoiled by honey spilled on them. Many producers have a small label which they place upon each five-gallon can of honey which leaves their honey house. This is a practice well worth cultivating.

Lithographed pails are popular with some bee men, and furnish a very attractive container, but where price competition is keen their use so raises the "overhead" that their sale is made correspondingly difficult. For the beekeeper who caters to a fancy trade where price is subordinate to that sense of delicate luxury supplied by a finesse of seals and trimmings, the use of the lithographed container and the odd-shaped jar of roughened and colored glass will create favorable attention and stimulate sales.

Although labels and labeling seem but a small detail in the work of producing honey and preparing it for market, their use is of considerable importance, for they are the outward signs by which the busy world judges the product in which the beekeeper has placed so much well-earned pride.

Dried, Sulphur-Treated Fruits Keep Vitamin C Content

Dried fruits, treated with sulphur dioxide gas, keep their vitamin C content and, therefore, their ability to prevent scurvy, according to a study made by Agnes Fay Morgan and Anna Field, of the University of California, and reported in the Journal of Biological Chemistry. The same fruits dried and not subjected to sulphur dioxide lose their vitamin value.

Fruits and vegetables are known to contain vitamin C, and it has been thought that these foods must be fresh to prevent scurvy. Since the danger of scurvy is greatest when an adequate supply of fresh vegetables and fruit is hard to get, much interest is shown in the effect of the methods of preservation on the vitamin C content. First, ripe peaches were used. They were picked, pitted and ground. Some of the batch was sun-dried and some dried in dehydrators. Part of the dried batch was submitted to sulphur dioxide over night. Feeding experiments were made, using guinea pigs. It was found that the sulphured fruit retains the full vitamin C content, while the unsulphured dried fruit retained no detectable amount of this vitamin. Sulphured dried peaches were found to rank with orange juice, raw tomatoes, and other highly potent antiscorbutic foods.

So here is another theory gone wrong. It merely points out the fact that we do not yet know all there is to know about food. Sulphur-treated fruits and vegetables have always been considered less desirable than the untreated dried fruit, but the above investigation shows, in the case of peaches at least, that this is not true. It indicates also the desirability of thorough study being made, a need which also applies to our understanding of the food value of honey, one of the most necessary things which should have immediate attention.

Not Franklin, but Wallace—Your Mistake, Mr. Dodge

In the article by Natt N. Dodge, "Disease Control, Can It Be Attained?" in the July American Bee Journal, a picture is given of the four original county inspectors in Washington, named in order Mandery, Cox, Franklin, and Espay. Mr. Dodge tells us that the man called Franklin should really be Mr. Wallace. This correction should be made in registering the names of these inspectors. It should read: Mandery, Cox, Wallace, and Espay.

Stock labels of various designs may be obtained. The child's face carries a human interest appeal as well as the message, "Give the children honey"

Rest, State Fairs and Honey

By Betty Bee

HAS your John the state fair habit? Well, mine has, and he usually introduces the subject something like this: "My dear, you have been working pretty hard. You need a rest. How about running up to the state fair a day or two? It will give you a change!" Now, next to having one's husband say, "My dear, you are getting younger and better looking every day," you like that sweet solicitude and the suggestion that you have really worked hard enough to have earned a REST.

Now, honestly, deep down in your heart you know very well, if you did need a rest, a change, and were to take one, it would **not** be at the state fair. You have attended too many state fairs for that. In fact you feel you know all about state fairs. If occasion demanded, you might even with your experience and knowledge manage one yourself. Yet, gullible as ever and influenced by your John's boyish enthusiasm, you pack up and go.

You find it just as you expected—the same as all other state fairs, the same crowds, the same exhibits, the same hurly-burly; and as always before, straight as any bee line imaginable, you find yourself led to your John's port of call—the honey and bee exhibit. That is **his** state fair. It is the hub of his universe throughout your stay. You know perfectly well he will anchor there and never leave it except possibly for meals and lodging, and then after considerable urging. You know just where to find him at any time. To all appearances, home, wife and children are forgotten. You can wander around to your heart's content.

John brought you for a rest, a change! For twelve months in the year you have either seen active or semi-active beekeeping practices; you have been involved either physically, mentally or financially, and here you are again for a rest, a change. The honey and bee exhibit becomes a sort of impromptu reception hall, and every man, woman and child who keeps, has kept or ever expects to keep one or one million colonies is welcomed as a brother. They gather in groups, or twos and threes, or crowds, and you hear fragments of a discussion — "Bottom Boards," "Spacers," "Hive Bodies," "Supers." You wonder how the children are managing and if Bobby remembered to feed the hens and if Betty wore her sweater. As lunch time approaches, you gently elbow your way to your John and mildly suggest food. "Yes, just a minute; Mr. Thusanso, I want to introduce you to my wife. Mr. Thusanso is the perfector of the Thusanthus feeder,," or hive stand, or queen cage, or something. "Double-walled hives," "winter packing," "September requeening" floats to your ears. Finally you manage to drag your John away, but you are accompanied by half a dozen or more fellow bee men with a tag-along wife or two who, like yourself, is probably there for a **rest!**

Throughout the meal the discussion continues. Sometimes it grows quite animated. "Caucasians versus Carniolans," "Jumbo versus Dadant Standard," "Propolis," "Bee Veils," "Roadside Selling." Then the reception committee re-establish themselves at headquarters and more attendant beekeepers are sifted out to join the procession at supper, where you probably have change of program and increased attendance. "Three-ply versus Wired," — you want to suggest they do away with wax entirely and simply use wire; what a joke that would be on the waxworms when they try to sharpen their teeth on that — but you are too timid; "Requeening without Dequeening," "Handling Package Bees," "Spring Dwindling," "Chunk Honey," a host of suggestions as to just how the department at Washington should handle their job, also detailed information regarding state entomologist management.

You have "rested" enough, so you break away for a movie or a concert, and if your experience is similar to mine, between numbers you are likely to hear a reverberation from someone about Cyprians or Holylanders, or length of tongues; and as you are dropping off to sleep after your first day of rest, your last impression is of John's voice in the lobby or at an adjourned committee meeting in the adjoining room about "Isle of Wight Disease" or "Pollinization," and you dream of Bacillus Alvei chasing Bacillus Pluton about the honey booth and your John and a huge waxmoth acting as judges.

The next morning, in desperation you determine to cut loose from them all and shift for yourself; but here, there, everywhere, you come upon them, these beekeepers, and if you wander close enough you hear fragments of "Fumigating" or "Requeening" or "Surplus." There is simply no dodging them. Last season I broke away from the fair entirely and went for rest and change to our state Art Gallery, and there, like an evil genius or a shady reputation, I found them also, this time before an exquisite Madonna of an early master, lovely in her holy motherhood, a work of art of which our club women are most justly proud, and I heard "I tell you, gentlemen, we can never eradicate American foulbrood until . . . "

I fled. I went back to John at the honey and bee exhibit. Escape is not for me. Once a beekeeper or a beekeeper-in-law, always one, forever and forever, I suppose. Indeed, I reckon I shall be mighty lucky if, when I reach the pearly gate I do not have to argue with St. Peter against BURNING!

But to change the subject, do you remember, when you were a small youngster, the great, fat slices of home-made bread spread thick with butter your mother or grandmother used to hand out to you for "between meals"? I wonder if in these brisk modern times we home makers are not too often inclined to turn over this finest of arts, the baking of good bread, to outsiders. Surely there is no one food upon which the health and welfare of our families depends so largely as upon good bread. It is truly the "staff of life," and since to us Americans it seems almost a necessity at each meal, its making is of the greatest importance. It is the largest single item in the diet of most families and is surely an economical and nourishing food if properly made. To those of us who are fortunate in having our own honey, this problem of good and fresh bread is not a problem, but a pleasure. Home-made bread, especially if sweetened with honey, has a flavor and quality particularly delicious and, besides being better, is more economical if made at home, and truly merits its name and worth as "the staff of life."

Good home-made bread is easy to make, as any experienced cook or cook book will tell you. Good yeast and good flour are necessary elements, to which honey adds its gift of mineral salts and flavor, serving as an ideal food for the tiny yeast

plants in the "raising." While most excellent bread is made with either dry or compressed yeasts, personally I like and use the old-fashioned "everlasting" yeast, of which I received a start a long time ago. It is so easy to add a little water, flour and honey the evening before, let rise until morning, add more flour, water and honey, take out my cup or two of sponge, spread upon this a little honey, set in a cool place for the following baking; then mix and knead my bread ready for hot rolls or cinnamon bread or rusks for luncheon. Moreover, my yeast problem is solved; but if one does not have the "everlasting," by using a sponge started the evening before with dry yeast or using compressed yeast the same day, using honey ALWAYS for the sweetening, delicious bread is the result.

Honey Whole Wheat Bread. Dissolve two cakes compressed yeast in one-half cup lukewarm water. Have scalded and cooled one quart milk. When milk also is lukewarm (85-90 degrees) add to yeast, mix well, add one-half cup liquid honey and enough good white flour to make a thin batter. Beat well. Let rise until light, then add alternately sufficient whole wheat flour and white flour to make a stiff ball, add one tablespoon salt, pour out on floured board and knead briskly, adding as much more flour as required, until dough does not stick readily to hand or lose its shape upon the board. Place in well oiled pan, buttering top, let rise until double in size, shape into loaves, butter tops, place in pans, let rise again until double in size, and bake forty-five to sixty minutes in moderate oven. Oil tops, remove from pans and let cool before packing away. The honey keeps this bread moist several days.

Honey Buns. The above makes most excellent buns. Proceed as directed, let rise until double in size, after sufficient flour has been added and dough holds shape on board. Then roll out on well oiled or floured board to about one inch thickness, cut into buns with biscuit cutter, oil top of each well, sprinkle with dash of cinnamon, place in buttered pans about one-half inch apart, let rise, and bake fifteen to twenty minutes. Excellent served piping hot with butter and honey.

Over Night Whole Wheat or Graham Bread. In the evening soak one cake dry yeast thirty minutes in one pint of lukewarm water, add one pound (about a quart) of white flour and one-fourth cup honey. Let stand in warm place over night. In morning scald and cool one pint milk, to which add one-fourth cup honey, four tablespoons melted lard and one

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AMERICAN HONEY INSTITUTE

FOUNDED 1928

BEE INDUSTRIES ASSOCIATION OF AMERICA

CHAMBER OF COMMERCE BUILDING

INDIANAPOLIS

DR. H. E. BARNARD, PRESIDENT

Cooperation from the Glass Container Organization

Such quantities of honey are now packed in glass that the glass bottle manufacturers, through their national organization, The Glass Container Organization of America, are conducting a national advertising campaign to stimulate a larger interest in the glass package.

The Institute has been in correspondence with the association and has suggested the desirability of indicating to magazine readers the character of the goods in the jars and bottles.

In a recent letter from the association, the Institute is advised that an advertisement will appear in the October 12 Saturday Evening Post and also in the October issue of the Ladies Home Journal which will show a jar of honey containing both the strained product and the comb.

Such suggested advertisements will undoubtedly stimulate a larger interest in honey packed in glass jars and bottles.

Dr. Barnard Selected by President Hoover to Organize Child Health and Protection

Did you know that your president has been selected by Mr. Hoover to develop the child health and protection work? This work will go on concurrently with the work of the Institute and in no way will it handicap the honey work. On the contrary, the child health and protection project will take Dr. Barnard to all sections of the country to organize special research work along nutrition lines. Here's where a greater opportunity will present itself for honey, in that as Dr. Barnard establishes these contacts he hopes to be able to interest a number of the workers in carrying on research to determine the role honey plays in the nutrition of children.

A number of conferences are now being arranged with prominent pediatricians of the country, one of whom it is planned will be started specifically for carrying on honey research, although it will be sponsored through the child health and protection work.

Please send in any suggestions you may have on problems relating to the nutrition of honey.

Advisory Committee of Bureau of Census

Suggestions for census of bee industry must be sent in to the Institute office by the fifteenth. Secretary Lamont of the Department of Commerce has organized an advisory committee to confer with and help the Bureau of the Census in planning for the decennial census as well as the biennial census of manufacturers. Dr. Barnard was honored by being selected to serve on that committee. The first meeting was held July 25 and the general plans of the work were started.

Members of the beekeeping industry have always felt that the data assembled at the last census was incomplete in that it included only honey produced on the farm. The modern development of the industry has made beekeeping not only a pastime, but a remunerative undertaking to dwellers in towns and the smaller cities. This is particularly true in recent years, since the practice of selling products, especially honey, at wayside stands has stimulated the operation of thousands of so-called honey farms.

If a more accurate survey of the bee industry can be secured, it will be most helpful. Since your president is a member of the advisory committee to the Bureau of Census, he may be able to help. Won't you, therefore, please send in your suggestions at once to the Institute?

Future Meetings

Here is a list of important meetings to be held in the near future. Won't you write us if you are planning to exhibit at any of these and let us help?

September 18 to 21—Midland Hotel Exposition, Milwaukee, Wisconsin.

September 30 to October 5—American Public Health Association, Minneapolis, Minnesota.

September 30 to October 5—American Child Health Association, Minneapolis, Minnesota.

October 7 to 10—American Dietetic Convention, Detroit, Michigan.

October 7 to 11—National Restaurant Exposition, Louisville, Kentucky.

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A Glance Through the South

By Jes Dalton

Louisiana State Bee Meeting

The Louisiana state meeting was held on schedule at Louisiana State University at Baton Rouge, August 7-8, during the farmers' short course. As many points of this meeting are of interest generally, it may be well to go into detail.

Cooperative Honey Marketing

This was discussed thoroughly. Where an attempt is made to market the surplus crop of a section during a heavy crop year, many difficulties arise. The most provoking of these in the present instance was the slowness in getting returns on the honey exported, and the impatience of some for complete returns even after substantial advances had been made.

Beekeepers, one after another, described how, last season, with a heavy crop a price of 40 cents per gallon for the honey could not be secured even after many trials in many markets. The department found means of taking this honey at its warehouse, paying freight, blending costs, and advancing the producer over 50 cents a gallon after deducting the above charges.

Returns on the entire lot of honey (some is still in the hands of brokers) show that it sold for approximately one dollar per gallon on the European markets, the net returns bringing the producer nearly double what he would have had difficulty in obtaining in any other way. This is in spite of the fact that Germany, where much of this honey was marketed, is burdened with war indemnities and occupational expenses and had faced one of its worst winters in years.

Producers, after one year of this, are now offered top prices for their crop, comparing very favorably with the prices obtained by the cooperative. But the vote was unanimously on continuing the cooperative. It is hoped in two or three years to build to the place where former conditions cannot again prevail, and to correct such weak points as may develop from time to time. It is planned to invite other states to join Louisiana and make a successful organization for the whole South. Cooperation is invited.

Southern Field Station Work

Dr. Oertel, of the Southern Bee Field Station, which is operating under the Bee Culture Laboratory at Washington, D C,, reported his preliminary work on southern honey plants and that it was hoped, with this fundamental groundwork, to cover the South with a complete study of honey plants—kind and type of honey yielded, dates of blooming, their relative importance in honey production and in building up of the bee colony, and as complete as possible data on the distribution of these plants in the southern states. Soil types as affecting the yield will also have to be studied. A check with test apiaries of a few colonies would also be highly desirable.

From this will be seen the vastness of the problem, but also its importance, since a few miles difference in the location of an apiary may mean the difference between a crop and failure, and may have a great bearing on the success of bee and package raising. H. B. Parks' work in Texas has been of inestimable value.

Dr. Whitcomb, in charge of the station, reported on the progress on standardization of packages. One has but to see the forty or fifty types of cages collected by the department, and on display at the meeting, to realize the problem at hand and the need for authoritative work along this line. Everything from the small, dark cage, in which the bees were so quiet one questioned they were there, to the large, completely screened cages, some so large they would not fit inside a standard hive. Size of cage, its makeup, type of bees, type of feed, the queen, how she is raised, how and where caged—all will have to be given careful consideration before the first recommendations can be made. But "Whit," as he is affectionately called around the station, has been making progress. Opinion could only be expressed, since the work has not gone to the point where facts are available.

Three distinct types of package bees may be noted. The old type of nucleus package, consisting of one, two or three combs with more or less brood and the adhering bees, has never given best satisfaction because of the limited number of bees, the great weight for shipping, and the chance for such elasticity in what constitutes a comb of brood and how many bees should be included with each comb.

The two types of packages which are surviving, and which will have to be most carefully studied, are the combless package, both with and without a queen, either loose or, as generally preferred, fastened in a cage inside the package, and the two-, three- or four-pound package of bees, with one or two combs included for feed and clustering and the queen usually loose in the package and laying en route.

The general tendency seems to be to build combless packages of the same size for both two- and three-pound to save a duplication of stocks. A slightly wider package will accommodate a three- as well as a two-pound package.

A chart showing how the price of package bees varies generally with the price of sugar was shown, and how the number of advertisers rose or declined with the prices at which packages sold.

Another point is apparently a decided trend towards lighter colored bees, evidently more on account of the demand of the northern buyer than any great preference on the part of the breeders. (Personally, the writer wishes this factor did not enter so prominently into the demand until, at least, both buyer and seller understood that we must not breed for color, unless we do it fundamentally, with a vision of maintaining all other desirable characteristics at the same time.)

Hon. Scroper Viner, Esq., an English gentleman, gave a short address on his beekeeping observations in England, Canada, the States, Costa Rica, Nicaraugua, Panama, Cuba, and Jamaica, describing various bees, hives and methods according to locality.

The meeting was marked by its complete spirit of harmony and absence of dissension of any kind.

The only times disease was mentioned was when the visit of Father John P. Cooney to a northern state was being given by him. He described his regrets at fearing to bring home a desirable type of bee he saw because of the prevalence of American foulbrood in that particular state. Also the English visitor, describing Jamaica, told how twice it had been infested by American foulbrood through ships calling at the ports with cargoes of leaking honey, and the cost of eradication, and how the authorities now prevent ships, laden with honey, from calling at the ports.

This is quite a contrast from a northern state attempting to prevent bees coming in on combs of honey from vigorously inspected free territory and admitting that inspectors were furnished blow torches not to burn diseased hives, but to mark them.

Conditions

Texas reports crop conditions very much improved in some places, good crop, and prospects of ample for wintering.

Mississippi reports great improvement in crop conditions and, if no fall crop, plenty for wintering.

Alabama reports a very peculiar season; honey coming in midsummer that should have been coming in spring; bees getting enough for winter and some surplus.

Florida—Bee conditions only normal, but depression on account of the fruit fly. Seriously considering calling off summer meeting.

Louisiana conditions similar to Alabama; crop very short, some 50 per cent short, but flow picked up in most places late, and in many places where flow should have come in spring, not a bit, and bees starved, but a heavy flow in midsummer. Winter supplies assured in most places.

Stillions Featured in St. Louis Post-Dispatch

A clipping from the St Louis Post-Dispatch, for Saturday, July 20, from their Current Events Topics, contains a story about F. M. Stillions and his two sons, who have an apiary south of Palmyra, on the Hannibal-Palmyra paved road. They have four yards, as the clipping says, "one for each of the three boys and the original one for dad."

The article goes on with Clifton Stillions, one of the sons, giving facts about bees which are very interesting reading to the layman who knows nothing of them.

The article is well done with catchy illustrations and is a good sample of what is possible in every locality. It also indicates how relatively easy it is to get the attention of the news people, because bees are so unusual and facts about them are so novel and interesting. Nearly all editors are willing to have a story when it is properly put up and will give it good attention and display.

We venture to say that this one story will do considerable for the Stillions in their beekeeping in the future and that it opens the way for other news notes in the St. Louis and other papers in their region. Good publicity is a valuable aid, which few know how to use.

The Biggest Bee State—California

By G. H. Hecks, Director of the De partment of Agriculture, Sacramento

That the 400,000-colony mark may be easily claimed by California is evident from the summary of the official 1928 registration. Before this registration was taken, probably no one knew just where and in what numbers California bees were located. The value of registration for statistical purposes should be unquestioned, since it puts beekeeping on a plane with modern business.

California is a thousand miles long, two or three hundred miles across and contains nearly every kind of climate and condition. The choicest commercial honey area is the sage belt, extending from Monterey down to San Diego, including the southern plateau and the southern orange belt of San Bernardino, Riverside, Orange and Los Angeles counties. About half of the bees in the state are in this area and it is considered to be fully stocked.

In the intermountain or great valley area about 90 per cent of the rest of the bees are located. This area is also well stocked. Any expansion of the industry must necessarily come in the other two regions. What the evolution of agriculture will do to these areas is awaited with interest, but at present they are not considered as the choicest commercial bee ranges, although some very good crops are reported from the less well known sections.

In the northern part of the intermountain belt excellent package bee possibilities have developed in recent years, extremely early and comparatively certain. It is estimated that at least sixty tons of package bees were shipped from this region during the past spring.

Statistics at hand are those of bees actually registered. Our experience leads us to predict that these figures are only about 75 per cent of the real number of bees in the state. Since this is the first registration, we consider the response excellent, and trust that California beekeepers will continue to support the movement.

Summary of registrations for 1928, given by nectar areas: 1. South coast and chaparral belt, southern California; sources, sage, citrus, lima beans; beekeepers, 3876; colonies, 174,528. 2. Intermountain belt, north and central California; sources, alfalfa, orange, star thistle, manzanite, creeping sage; beekeepers, 5303; colonies, 127,057. 3. Transmountain belt, Great Basin, Owens and Imperial valleys; sources, alfalfa, cotton, clover, melon; beekeepers, 505; colonies, 26,630. 4. Bay region and cut-over redwood area of the coast range; sources, deciduous fruit, alfalfa, fireweed, Christmas berry; beekeepers, 802; colonies, 9155. Total number beekeepers registered for the state, 10,486. Total number of colonies, 337,370.

A New Way to Kill an Obstinate Drone-Layer

If this is all that its originator claims, it should be valuable. R. Graue, of Tangendorf, Germany, says he has observed that an obstinate drone-laying colony will accept a young virgin, and he proceeds thus:

In the evening pass the bees through a queen excluder to get rid of the "dud" queen, should one be present. Shake the bees then in a heap on the grass in a place where they are protected from wind and rain but not where they can climb up a wall or tree-trunk. In the middle of them stick a branch about a foot long, with twigs. Run a virgin queen among the bees and leave them there all night.

Next morning take up the branch early with the bees clustered on it and hive them in a clean hive on the old stand. The colony almost always becomes queenright.—From May Bee World, reported from the May Bienenwirtschaft-liches Centralblatt.

A Safe Way of Introducing Valuable Queens

The following method has never failed here, but needs a wider trial:

As soon as the mailing cage comes, the queen to be superseded is found and two combs of emerging brood with stores and bees are taken from her hive, placed in a two-frame nucleus hive, and the mailing cage between them, face downward. The entrance is closed and the nucleus hive removed to a cool, dark shed, where it is left undisturbed for four or five days.

By that time the queen has been liberated and is generally laying. She is then returned to a stand beside the parent hive and the entrance opened to one bee space.

Otherwise the main hive is opened at once, the old queen destroyed and the two new combs reinserted side by side with the new queen and bees. So far we have had no failures by this method.—Bee World, May, 1929.

Commissioner Kitchen of North Dakota Calls Beekeeping a Sizeable Industry

Hon. J. A. Kitchen, commissioner of agriculture and labor for North Dakota, before a group of nearly two hundred beekeepers gathered in annual session at the summer meeting of the North Dakota Beekeepers' Association, held July 24 at Hillsboro, stated that the abundance of nectar-producing bloom and the fine climatic conditions made honey production an ideal industry in North Dakota. These conditions are largely repsonsible for the remarkable development of the industry in the Northwest during the past ten years.

Bees in the Carolinas

By Frank C. Pellett

Attractions and Opportunities of Honey Production in the Cotton Country

At the helm in North Carolina. The tall fellow is F. B. Meacham; in the center is C. L. Sams, and at the right, Z. P. Metcalf, Chief of the Department of Entomology.

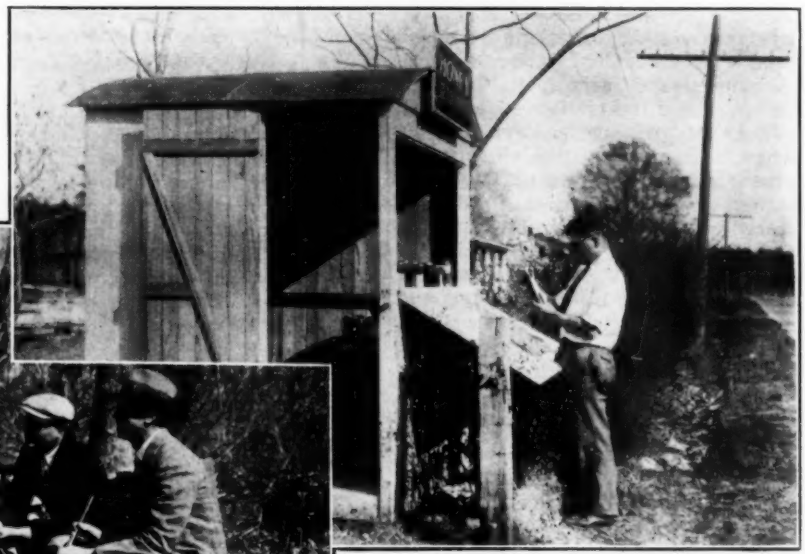
COMMERCIAL honey production is of comparatively recent development in the Carolinas. While conditions there are very favorable, the possibilities of beekeeping as a business have not been appreciated. Bees apparently have been kept since the early settlement of the country, but in most cases they have not been taken seriously. During the past few years there has been a great change. Now we find men with liberal investments in bees and equipment. Men who are capable of holding responsible positions in other fields are giving all their time to the bees and finding it both profitable and interesting. The Carolinas are worthy of being better known.

Soil and Climate

Bordering on the Atlantic Ocean is a large area of coastal plain which extends inland nearly two hundred miles. The soil is rather sandy, but well adapted to the growing of vegetables. There are extensive swamps where tupelo yields large crops of good honey. The tidewater areas offer the best beekeeping opportunities and most of the extensive honey producers are located in this section. The winters are mild, rainfall is abundant and plant life is varied.

Farther inland is the higher country known as the Piedmont, with a fertile soil and diversified agriculture. Cotton is the principal field crop, but other crops are gradually replacing it to some extent.

North Carolina has a still higher area, known as the Mountain Region, to the north and west of the Piedmont. Although the winter temperatures are lower than in the country near the coast, the region is famous for its pleasant climate. Much of this region is broken and covered with forest. Sourwood is the principal source of honey in this area. Under favorable conditions good crops are harvested and the quality



Above, J. R. Pinkham has an interesting roadside stand

At left, Peter Shaffhouser tells a bear story

is such that it brings high prices in local markets. Some beekeepers move their bees from other sections to the mountains for the sourwood flow.

Honey Sources

The clovers, tulip-tree and sourwood are of greatest importance in the higher elevations. Clover and sourwood yield good quality honey, while that from the tulip-tree, commonly called "poplar," is dark and strong. The tulip-tree blooms in early spring and only yields a maximum crop to the good beekeeper who is able to get his colonies built up early in the season. Sourwood, as already mentioned, is found mostly in the high country, while the tulip-tree is distributed over the greater portion of both states.

In the pine lands, gallberry is abundant and widely distributed. Gallberry honey is light and does not granulate readily. In the tidewater region, where tupelo abounds in the swamps, gallberry is also common in the sandy woods, thus providing two major sources of high quality honey.

The best beekeeping locations appear to be in the swampy areas near the coast and in the sourwood forests in the mountains. By far the largest number of commercial apiaries are found near the coast.

Taking the two states as a whole, there is a long list of very good honey plants. Besides those already mentioned are persimmon, blackgum, basswood, holly, huckleberry, locust, cowpeas, sumac, goldenrod, wild blackberry, maple, and many others.

There are few places in America where such a great variety of honey plants is to be found in a similar area. While this greatly increases the chances of securing a crop every year, it does not insure larger average yields than are secured in neighborhoods where some one major source of honey is grown in large acreage.

White sweet clover is coming into use on Carolina farms in rotation with cotton and other field crops. Its presence is adding much to the resources of the beekeeper in many places. There is every reason to believe that the acreage will rapidly increase, and, if it becomes generally cultivated, as now seems probable, the Carolinas will offer some of the finest beekeeping territory available anywhere. If we add a dependable flow from sweet clover to that already present in some of the best sections, prosperity will be insured for the honey producer. The mild climate and rapidity with which increase can be made make it an attractive place in which to engage in this business.

Beekeeping Officials

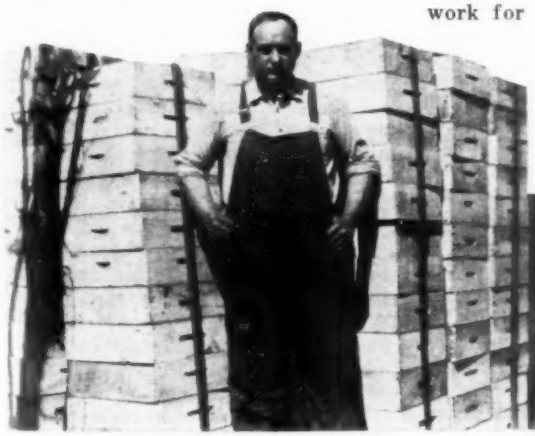
In South Carolina the bee specialist is E. S. Prevost, of Clemson College. He has spent several years in the work, and the results of his efforts are very apparent. South Carolina officially recommends not more beekeepers, but better ones. Prevost goes about the state offering his assistance to any man who wants to improve his methods, transfer his bees, treat disease, or meet any of the numerous problems which confront the man who would make a profit from the care of his apiary.

Most of the bees were kept in hollow logs until recently

In North Carolina, C. L. Sams goes about the state in similar manner. Sams has been engaged in extension work for many years and is known from one end of the state to the other. I was surprised to find so many commercial honey producers who gave the credit for their present prosperity to assistance received from C. L. Sams during the early part of their career. At the college at Raleigh, beekeeping is taught by F. B. Meacham, who is also secretary of the state beekeepers' association and who is conducting some research work in beekeeping problems. Dr. Z. P. Metcalf, chief of the department, has general supervision of the work and is vitally interested in the development of honey production in his state.

E. S. Prevost,
Bee Specialist in South Carolina

The results of extension work in both states have been outstanding. At present the small apiaries on many of the farms are kept in up-to-date equipment and given good care, instead of left to swarm at will from hollow "gums" and boxes. The commercial bee men of the Carolinas are highly skilled men who keep



Eli Wineset has 1200 colonies of bees in the tidewater region and 100 acres of orchard in the high country.

George H. Rea is now rearing queens at New Bern, North Carolina

enough bees to harvest crops worth while.

Unfortunately, I failed to secure a photo of D. Dunavan, who teaches beekeeping at Clemson College. Dunavan is one of those pleasing personalities whom one likes to meet and who is able to pass on something of his own enthusiasm to his students. Young men going back to the farms after a course in the institution are not likely to be satisfied with a row of "gums" with bees in the orchard. Either they will give the bees the care they deserve, or dispense with them entirely.

Beekeepers Worth Knowing

I was disappointed in failing to find several of the large honey producers of North Carolina at home. I had a brief but interesting visit with E. R. Ratley and his brother, J. H. Ratley, but did not see their apiaries. A third brother was in the hospital ready for an operation. The brothers produced sixty tons of honey last year at their yards about Lumberton and St. Paul.

Eli Wineset, of Whiteville, has twelve hundred colonies of bees in the tidewater region and one hundred acres of orchard at Mt. Airy, in the high country. Some years he moves his bees to the mountains for sourwood. He has a flow from several sources of honey which overlap, but which are about over by the middle of May. There is but little for the bees then until fall.

In the Wilmington district there are several extensive producers; in fact most of the big bee men are within a day's drive of that place. George H. Rea, well known because of his long service in extension work in North Carolina, Pennsylvania and New York, has resigned his official position and is now rearing queens and package bees at New Bern, North Carolina, and running an apiary for honey at his old home in Pennsylvania. Rea is now practicing what he has preached for so long and seems to like the practice quite as well as the preaching.

Rea went with me to visit Peter Shaffhauser, who lives in the woods near Havelock. Shaffhauser amused us with stories of his troubles with the bears which destroyed his bees, and the game wardens who made him trouble for killing the bears. Fire is a serious menace to apiaries in isolated places. Between occasional fires and visits from the bears, the beekeeper has to keep a watchful eye on his outfit.

J. R. Pinkham has a decidedly attractive roadside stand at his home near Washington. Finding Mr. Pinkham absent from home, I was able to photograph his sales outfit while awaiting his return. Pinkham has six hundred colonies in nine yards. He has a wide variety of honey plants, but his territory does not encourage large apiaries.

A visit to the Carolinas is an interesting experience. There is such wide variety of conditions that one never knows what to expect next. At Pleasant Garden I found Carl E. Causey, an up-to-date queen breeder, formerly of California. Causey's bees were in the shade of tall pine trees, but his honey sources were entirely different from those in the tidewater area. Clover and tuliptree with vetch and wild blackberry are his principal sources of honey. He states that the honey from blackberry is light in color, with something of the flavor of the ripe berry. Besides his home apiary, he has four outyards.

D. T. Gaster, of Randleman, was busy in his little apiary, getting ready for the season. In the hills he has a pleasing situation in which to live and work. All around are large trees interspersed with small fields. His honey sources are similar to those of Causey, but his locality will not support many colonies in one yard.

In the high country one finds different conditions from the low country. There are hills instead of swamps; there is a different flora and a different climate. There one finds smaller yards and perhaps they are farther apart. Both regions have their own attractions, but a good beekeeper will succeed in either place if he adapts his management to the conditions peculiar to the locality.

Honey Tooth Paste Formula

In the January issue of the American Bee Journal you asked for a tooth paste containing honey. Here is the formula that is practically the formula of one of the most popular and more expensive of the widely advertised tooth pastes:

Potassium chlorate, ½ ounce; boric acid powder, 1½ ounces; honey, ½ drachm; tincture of soft soap, ½ drachm; peppermint oil, 3 drops. Water sufficient to make paste of proper consistency.

I have tried it, using both glycerin and honey as a sweetener and builder. While this formula is a good tooth paste, I can hardly say that I believe it to be practical. Glycerin is preferable to honey in that it inhibits the oxygen interchange of the constituents. Honey might have a tendency to influence oxygen balance. Honey is too inconstant as to acid and enzyme content.

A tooth paste, to be practical and financially a success, must be constant as to its characteristics at all times, even after being in the tube for a varying length of time.

Tooth pastes contain potassium chlorate carrying three oxygen atoms. Should a small amount of this split off while still in the tube, same would swell and be non-marketable.

That oxygen group is one of the most important in the paste. It is what inhibits growth of the vincent organism, an anerobic organism growing only in the absence of oxygen. This germ is probably the worst offender in the way of infecting gums.

Very little honey can be put into the paste, about half a spoonful to a tube.

It is good for sentimental reasons and advertising, however. Beekeepers might have the paste made up for their own use. Dispensing druggists will put this into a collapsible tube at a moderate price. In quantity, pharmaceutical houses can decidedly undersell the proprietary preparation corresponding to same.

Dr. W. Ray Jones.

Nationwide Fruit Embargo Looms as Fruit Fly Spreads to Six States

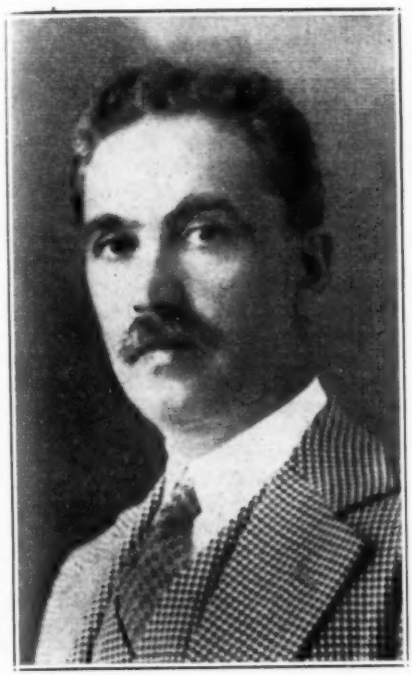
Complete demoralization of the fruit industry because of a nationwide ban on interstate fruit shipments loomed as a result of the activities of the Mediterranean fruit fly, Florida's insect invader. Entomologists are in a panic over the announcement that in a few weeks since the discovery of this fly near Orlando, Florida, it has spread into six states, going as far north as New York City and passing over the barrier of the Mississippi River.

Reports indicate that in spite of the quarantine now maintained, the fly has passed into Louisiana, Arkansas, North Carolina, Georgia, Texas, and New York, although it has not been found to infest orchards in any state but Florida. Unless contaminated fruit containing the fly maggots is found and burned, the commercial orchards in these other states are bound to become invaded.

In view of this alarming evidence, the Federal authorities are considering placing all states under Federal quarantine to prevent reshipment of infected fruit and simplify the problem of control. Two- thirds to three-quarters of the Florida crop had probably left the state before the fly was discovered, and this fruit has been shipped to all parts of the country. The southern states are the ones to suffer most, as it is likely that the infection would be killed by the northern winter.

Beekeepers who are interested in the pollination problem should watch the development of this among commercial orchards in their region.

An Italian Work on the Honeybee



Sig. Carlo Carlini, of Santarcangelo di Romagna, Italy, has just published a whole treatise of 245 pages, entitled "Apicoltura Pratica Italiana," with numerous engravings, on beekeeping by the most modern methods. It is out of the question to give a detailed description of it here, since it is entirely in a foreign language. But a perusal of the work gives evidence that it is up to date.

Cell Cappings of Different Bee Races

In La Gazette Apicole for May, after giving a translation of Mr. Frank C. Pellett's article, "The Origin of the Honeybee," Monsieur Perret-Maisonneuve describes some observations of his own on cell cappings. He noticed that a large quantity of round convex cappings from worker-cells were carried out of the hive early in the morning by the bees of some pure Cyprian colonies. He had also previously seen the same thing, on a lesser scale, in the case of Italians, but had not paid attention to it. He now investigated, and found that the cappings were composed of a firmer and tougher silk tissue than those of the ordinary European bee; so that the emerging worker could not gnaw away her capping, but was obliged to cut it out, as does the queen, by describing a circle with her mandibles. The discarded cappings were of silk only; not a trace of wax was seen. The cappings of the blacks, on the other hand, were composed mainly of wax, mingled with thin and irregular silk threads. Thus the Cyprian larva spins more silk than the black, and makes a capping much like that of the wasp. M. Perret-Maisonneuve suggests that this supports the thesis that bees had wasp-like ancestors, and that the Cyprian, and to a lesser extent the Italian, are less advanced in development than the black bee in this particular matter of cappings.

M. Perret-Maisonneuve states, in the course of his argument, that the wasp cuts out her capping as a circular piece (like the Cyprian bee and queenbees of all races). Now, in La Gazette Apicole of January last, the same author published a note on the emerging queenbee's method of dealing with her capping, in the course of which he mentions that he enclosed a queenbee, a queenwasp, and a solitary wasp (**Cerceris**) in corked tubes. The bee tried to cut out a circular piece of cork, but the wasps gnawed their corks in their attempts to escape. (There is either some confusion here or else wasps, when fully adult, react differently to imprisonment than they did when at the emerging stage, while the queenbee retains her "infantile" method of escape). A. D. B.

Paul Knows His Bees

By Mabel Carter Good

THOSE of us who did not know Paul Albert McEwen thought calling him in to take charge of a bee-filled room on a ranch near San Diego was nothing short of crazy. It seemed such a difficult thing—coaxing a swarm of bees from between the walls of an upstairs room into a hive; and we doubted if a boy of fifteen could do it, but being guests who had to be provided with accommodations outside that room, we held our peace and watched developments. The more we saw the wider we opened our eyes.

Paul arrived about nine o'clock in the morning. We saw a sturdy, pleasant-faced boy of medium height, who returned look for look and gave a strong hand clasp in response to greetings. His keen blue eyes and light hair contrasted in true California fashion with his healthy coat of tan.

He was driving his mother's car, and on the seat, beside him, sat that quiet, unassuming lady, who is his help and encouragement at every turn even though she does not really "enjoy" bees.

Without ado, Paul inspected the bees and comb revealed where the boards had been ripped off the wall of the paneled room. He asked a few pertinent questions and then went back to the automobile to dress for the occasion. The generous suit of coveralls, heavy boots, long gloves, and wire screen and cheesecloth shield dropping from his hat to his shoulders, all securely fastened at neck, wrists, and ankles, gave him a very businesslike appearance, and he had nothing to fear from the weapons of the infuriated bees. There was no doubt about their resenting the intrusion.

Seventeen bee-covered combs, four inches wide and three feet long, hung there in plain view. The whole mass of honey-filled wax was nearly a yard square and four inches deep. Paul did not stop to admire the truly interesting sight. He had a job to do and lost no time in getting at it.

He lighted a piece of burlap and put it into his "smoker," a small, spouted can with bellows attached. With this he blew the smoke among the bees and so deadened the mass that he could work with them. Carefully lifting the strips of comb from the wall, he shook the bees off into the hive and fixed the pieces of comb into the frames which he had provided. He worked as if he were doing the most simple thing in the world. Every move was unhurried and sure. He knew what he was doing and did it without fuss—in fact, with very evident enjoyment.

When all the comb was down and most of the bees in the hive, he left,

Paul Albert McEwen, of La Jolla, California, knows more about bees than most men who work with them, even though he is only sixteen.

even though hundreds were buzzing around the room, protesting loudly. He said he could not be sure he had the queen in the hive, so he would be back in the morning. Bright and early he arrived.

"There is the queen," he remarked, pointing to a good-sized ball of bees huddled in the topmost corner of where the comb had been. "I'll have to get her."

"But how will you get that ball into the hive?" I asked. He smiled, amused:

"Just take it in my hands and put it there."

Nothing seemed simpler to him and nothing could be simpler—to him. After again using his "smoker," he took the ball of bees in his gloved hands and put it into the hive, and his job was practically done. He brushed off the hundreds of bees which had gathered nearly the full length of his arms, as nonchalantly as if they had been so much dust. I believe he loved every one of them.

The ranch owner delighted him by making him a present of the swarm. Now he had thirteen hives—not bad for only eight months' real work at the business.

While he was busy, I talked to his charming mother. She told me of his little boyhood. He was born in San Diego, California, in September, 1913, and was just like all healthy little boys. He had no special interests outside the usual boys' games until he was eleven or twelve years old. No definite thing happened to attract his attention to bees. He just began to look at pictures of them and then to talk and read about them. As he looked and read, his interest grew until it became an absorbing one, and before long he began neglecting his studies to dig into technical works on their habits and culture.

Paul's father is Dr. George F. McEwen, oceanographer at Scripps Institution of Oceanography at La Jolla, near San Diego, and a firm believer in helping his son acquire real information about anything in which he shows keen interest. So, about the beginning of the school term in September, 1927, he and Mrs. McEwen decided to back Paul in his thirst for knowledge of his buzzing little friends. They made it possible for him to get the necessary equipment and to have access to technical works on the subject. Paul was so interested by this time that he begrudged every moment he must give to anything else. He even took the volumes to school and read them instead of studying.

In the La Jolla High School, where Paul is a student, the principal has been very successful in studying each pupil to find out in what he is interested. When Paul neglected his English to such an extent that he was far below the requirements, the principal looked into the matter, with the result that Paul was allowed to give talks to the class on the subject of bee culture. It was thought that he would talk a little and then the class would proceed with English, but Paul "knew his bees" and was so well informed that he talked fifteen minutes every day for three weeks, and could have gone on longer, but the class simply had to study English, not bees. In this way he made his grade.

Outside of school he spends his time trying to hive every swarm of bees he finds in his tramps through the many picturesque canyons around La Jolla. The first three times he tried he failed. The fourth swarm he found in a hole in the ground about half a mile from home. After getting all dressed for action, and surrounded by the hive, frames, etc., necessary, he set to work. In two hours he had the queen and her attendant swarm safely inside the waiting hive. He was the proudest young man in San Diego county as he carried that hive home. For a long time it was the only one he kept at home.

Whenever he hears of an apiary, he is restless until he visits it. On one such visit, about fourteen miles from San Diego, he found the owner out of patience with his bees. In his irritation he said he would like to get rid of them. Paul's eyes got big even as he told me about it. There were eleven hives.

"I'd like to buy them from you," he told the man.

"Buy them? No! Take them and welcome."

So that is how he completed his first dozen hives. The swarm from the ranch guest room wall made thirteen and started the second dozen. All this happened in the spring of 1928. Since then he has worked harder than ever and now has forty-seven hives to his credit. Six of these he keeps at home. Four of them he has in a peach orchard fifteen miles northeast of La Jolla. The remaining thirty-seven are fourteen miles in another direction. He cares for all of them and knows not only just what each hive has cost him, but also what each one makes for him in money.

He has two more years in high school, and by the time he graduates expects to have enough money from his enterprise to pay his first year in college, at least. Stanford is his choice, because that was his father's college, and he hopes to make great progress there in his favorite study—bees.

Jackass Clover

There is an interesting discussion of the origin of the name of this plant, in the January issue of California "Beetimes," the newsletter of the association. We quote as follows:

"The subject of jackass clover and the fine honey it produces received quite a little notice at the convention. In this connection Mr. Christman called attention to American Honey Plants, by Pellett. In this article Mr. Pellett described the plant and the fine honey it produces. He stated that he believed this plant would become one of the greatest honey-producing plants of the state, and announced (copying from Richter's Bulletin of California Honey Plants) that Henry T. Christman, of Coalinga, was first to see its value and gave it its present name. Mr. Christman expressed some disappointment at being credited with giving such a name to such a valuable honey plant, and showed a honey label that he used at that time, 1920, where he called the plant 'golden clover,' and finished by saying that at the time mentioned by Mr. Pellett, C. I. Graham was located in the same vicinity and depended upon a team of burros for hauling bees. In idle times the burros took care of themselves and on one occasion were lost in this clover, which was growing to the height of four feet or more. Mr. Graham spent an entire week hunting for the burros and lost a honey crop by failing to be able to move to the new field. He was so displeased with his experience that he named the plant 'jackass clover.' We agree with Mr. Christman, because of the color of the flower and the fine flavor produced, that 'golden clover' is the most appropriate name."

U. S. Chief Supplier of German Honey Imports

Of the 2,993 metric tons of honey imported by Germany in the first quarter of this year, almost a third, or 876 tons, were furnished by the United States, while in 1928 of the 9,371 tons brought in 2,879 came from this country, according to a report from Consul E. Talbot Smith, Hamburg, made public by the Department of Commerce.

The next highest exporter of the product to Germany in the periods mentioned was Cuba, which supplied 562 and 1,355 tons respectively. The island ranked second also in 1927, while in 1926 Guatemala occupied that place, the lead being held by the United States. Other countries that ship considerable quantities of honey to Germany are Haiti and Chile.

Honey is very popular in Germany and the demand from year to year is fairly constant. According to local importers and wholesale dealers, Germany's annual consumption of honey varies between 33,000,000 pounds and 44,000,000 pounds, but

this estimate is merely approximate, inasmuch as there are many hives scattered throughout the rural districts of the country and no official figures covering their yield are available.

Ordinarily, Germany produces about two-thirds of the honey consumed in the country, and must import the other third. During 1927 and 1928, however, a larger proportion was imported, as Germany's crop was poor and the crops in the United States and Central America were excellent.

The 1928 German crop on the whole may be designated a normal, average, medium crop. Dealers consulted estimate it at between 17,600,000 and 19,800,000 pounds. Though crops in the southern and part of the eastern sections, where favorable weather conditions prevailed, were good (especially in the south) and crops in central and certain portions of eastern Germany were medium, the northern districts, which experienced exceedingly bad weather, produced a very poor crop. In the district stretching from the northern part of the province of Hanover over the Rhineland to the Dutch border, a section ordinarily producing Heide Honig (heather honey), the weather conditions were very bad, with the result that there is practically no Heide Honig this season.

Bureau of Chemistry to Study Diastase

The carbohydrate division of the Bureau of Chemistry and Soils will make a thorough study of the diastase content of American honeys. It is obviously essential to know what honey contains and to ascertain the value of its various constituents if honey is to be utilized to the greatest possible extent.

The amount of diastase in honey is used as a criterion of its purity in Germany. There seems also to exist a correlation between the amount of diastase and the degree to which honey has been heated. This enzyme, therefore, plays an important part in judging purity and qualiy in honey. Undoubtedly the flavor of too much of our honey is injured because of careless heating, and a further knowledge of diastase may suggest changes in the manner of handling honey.

It is desirable to analyze samples from as many floral sources as possible. This study will therefore offer beekeepers an opportunity to have their honey anlayzed for diastase. Samples should be sent in good, tight containers to the Bee Culture Laboratory, Bureau of Entomology, Washington, D. C. The honey should, of course, be unheated, and the floral sources of the honey stated as accurately as possible, together with the time the honey was produced and extracted. Fresh comb honey will also be analyzed. At the conclusion of the examination, beekeepers sending samples will be given a report of the analysis. With the facilities at hand, it will be possible to analyze only between three hundred and four hundred samples, and as soon as this number is received it will be necessary to refuse further samples.

Federal Bee Specialists Seek Data to Reduce Honey Production Costs

Beekeeping practices and management as well as the marketing of honey have been studied during the past year by the bureaus of entomology and agricultural economics of the United States Department of Agriculture with a view to formulating methods that will help the beekeeper prduce honey at a profit.

A preliminary report of the survey of apiary practices in the intermountain region — Utah, Colorado, Montana, Wyoming, and Idaho—covering the data secured in 1928 will soon be ready for distribution. A similar study will be started this year in the clover honey producing region and both studies will be continued until sufficient data have been obtained to warrant advice being given on practices and management in beekeeping as well as regarding honey houses and equipment that have been found to be efficient and profitable.

Beekeepers cooperating with the department in these surveys keep daily records of labor and expenses, make invoices, and report on the management practiced under a variety of conditions. This information will be of interest to all beekeepers who desire to compare their management practices with those of other beekeepers.

Forty apiaries were included in the 1928 survey, ranging in size from 150 to 1800 colonies, and covering a total of more than 24,000 colonies.

The results of this survey, according to E. L. Sechrist of the Bureau of Entomology and R. E. Kifer of the Bureau of Agricultural Economics, show that the great variance in labor and investment costs, as well as the yield per colony, have a marked influence on the beekeeper's profits.

"In general," they say, "losses and gains were shown to be closely related to poor yields, but not invariably so. In two instances of a low yield of eighty-five pounds per colony one producer's records showed a loss, while the records of the other showed a gain of $3.30 per colony.

"Though the cost of producing extracted honey ranged from 1.5 cents up to about 22 cents per pound, the highest and lowest costs were for various reasons abnormal. For 70 per cent of the producers, the computed cost fell within the range of 4 to 8 cents a pound.

"It is useless to expect the price of honey to become high enough to provide a profit for the beekeeper who will not or cannot produce honey efficiently, and there is need for a careful study and comparison of the systems of management."

Such investigations cannot be carried out successfully without the active cooperation of the various state agricultural extension agencies, the bee press, beekeepers' organizations, and particularly the beekeepers themselves. All these have done excellent work in the past, and help given by them in personal contact has been of great value, the bureaus say.

The work undertaken in the clover region this fall will depend to a considerable degree on the assistance and cooperation of local beekeeping specialists and beekeeping organizations. Any organization able to assist in these surveys is invited to communicate with the Division of Bee Culture Investigations, Bureau of Entomology, United States Department of Agriculture, Washington, D. C.

From Florida

I await each month with keen anticipation the coming of the American Bee Journal. Combined with a multitude of other bread-and-butter duties, I manage a small apiary, which I have built up from five two-pound packages in the spring of 1928 to eighteen colonies, and, besides, I have managed to obtain a surplus of approximately thirty-five gallons.

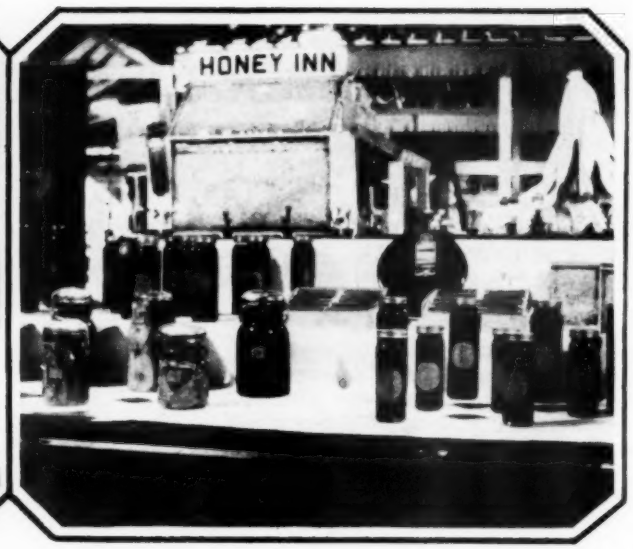
As I had a little previous experience in managing bees, I did not find it very hard to begin over again.

The upper Florida keys are mainly covered by beekeepers, but the lower keys, of which Big Pine Key is the largest, have very few colonies. So I intend to keep on building and still devote almost all my time next year to the business.

Our honey comes mainly from metopium, Jamaica dogwood, and black mangrove. There are a multitude of other trees and shrubs, cultivated and uncultivated, which yield at times a surplus, but are at all times helpful. The coconut palm keeps a supply of pollen almost all the year. The thrinox palms bloom several times during the season. We end up about December with the bloom of the buckthorn, and in February the metopium begins to flower.

Nellie J. Shanahan,
Florida.

The beekeeper can be right there with honey in all styles, for sale at the Fair



A good exhibit is enough to arouse interest—the sale is comparatively easy

Getting the Honey Message Over at the County Fair

By D. C. Gilham

THERE are great possibilities for advertisement of honey and honey products at our state and county fairs. Our county started a fair about five years ago and placed me in charge of the apiary department, so it is up to me to have an exhibit of honey. I always endeavor to give them something new in design of display every year, and the fair association as well as the public have appreciated my efforts. In the picture I have constructed a small house made up of combs of honey, and with a light inside you could see the fine light honey with which the bees had filled the combs. Surrounding the house was a small yard, enclosed with logs as a fence, made of beeswax and intersected with flower pots made of wax and small flowers in same. The kewpie dolls made of beeswax were having a May pole dance in the yard. The comb and extracted honey, etc., surrounded this central exhibit.

When the fair started I at once rented space for a booth in the fair grounds, but experience soon taught me that my best location was inside the building near the honey exhibit. People would stop to see the honey and the bees in the observation hives, come to me and ask questions and purchase some honey or honey candies. We sell ice cream and make honey sundaes, which take very well every season. As a drink for the warm weather, we make honey lemonade. We make money on this, and the fellows outside, with soft drinks, etc., will come inside to us for a drink of honey lemonade to quench their thirst. In the line of honey candies we do well with our five-cent bars, honey caramels and assorted honey chocolates. The size of the fair and the crowds have much to do with total sales. Our state agricultural show means more business to us than the county fair. We always pick up new customers, with repeat orders coming in afterwards.

> Here is a fine instance of success at fairs. If our beekeepers copied this method at all the fairs which they could attend, there would be an unlimited sale for our products. But they must bear in mind that there is a big lot of work in this business. However, it pays in dollars, for it sells your honey.

Beekeepers not making honey candies, but selling honey of their own, can add more to their sales by purchasing honey candies from some good source at wholesale and retailing same at their fair. Last fall a beekeeper ordered fifty dozen five-cent bars for his booth at the fair. It opened Tuesday. Tuesday evening he wired to duplicate the order. The duplicate order was gotten off Wednesday evening and the one hundred dozen sold before the week was over. Again an order of two hundred dozen bars and fifty pounds of assorted chocolates shipped on Thursday failed to be delivered until the following Tuesday evening, which should have been received the Friday before. Monday and Tuesday were lost as sales days. Wednesday and Thursday cleaned up the goods at the Philadelphia flower show. If delivery had been made promptly, a wire for a duplicate order would have been received and the party in charge of the booth stated that if the intended program had gone through, three times the amount of honey candies could have been sold.

Food Values and Honey

In food science we are now in what may be called the Vitamin age. Previously, the human body was likened unto a steam engine into which food was stoked and burnt up like so much coal, thereby using up a certain amount of calories (heat units). It is well to remember that calorie content does not indicate wholesomeness, and also that food is not directly used up as the fuel of an engine. Food does not act directly upon the body in the sense that it immediately imparts health and vigor. Food has first to become part of the living tissue, and it takes some time before digestion and assimilation are completed. Recent research seems to show that the amount of protein (albuminoids) can be halved from that considered essential. It also appears that the quantity of cereals should be reduced after maturity has been reached.

Now that the vitamin theory has taken the field in food science, it has been exploited commercially by artificially supplying vitamins in various foodstuffs, and this has almost become a fad in both America and Britain.

It is not necessary to repeat in the American Bee Journal all the familiar reasons, well known to beekeepers, why honey should be an article of daily diet. It is well to remember that the last word has not yet been spoken in food science, and also that **the vitamin theory is only one link in the chain of the science of nutrition.** For that reason we should not worry if scientists disclaim the presence of vitamins in honey. The question has not yet been finally settled.

Pure honey is a living organic foodstuff which should be on the table at every meal.

L. S. H., England.

Illinois Bee Tour

By Frank C. Pellett

THE third successful tour of the Illinois Beekeepers' Association was held July 24-26. V. G. Milum, secretary of the association, and A. L. Kildow, state apiary inspector, cooperated in putting on the tour, which was much enjoyed by those who participated.

Starting at 7:30 a. m. at the Maxel Mapes farm, at Paris, the bee men traveled some hundreds of miles during three days, visiting many places en route and closing with an evening meeting at the court house at Mt. Vernon.

Besides Mr. and Mrs. Kildow and Professor Milum, John S. Dowdy of Atlanta, J. W. McKendrick of Silvis, H. G. Frymier of Carbon Cliff, S. A. Tyler and son of San Jose, and Frank C. Pellett of the American Bee Journal made the entire trip. Several of these also had accompanied the 1928 tour.

A number of cars joined the tour each day for a few hours, to be replaced by others as they turned back. The crowd varied from about twenty to sixty at different times.

The first day visits were made at the Charles Kruse apiary at Paris, with Herman McConnell at Robinson, and with Jay Smith at Vincennes, Indiana. Kruse is a successful comb honey producer who turns off a car or more of comb honey each season. McConnell is a queen breeder, who had some very interesting methods to demonstrate.

When the crowd reached Vincennes it was past noon and they were hungry, but Mrs. Smith had prepared a delightful meal, which put everybody in a frame of mind to enjoy the afternoon program. Smith has changed his methods of queen-rearing radically and is now following the Pratt system of mating in small nuclei. He has also adopted an incubator in which ripe cells are placed until the virgins emerge.

The second day, stops were made with Robert Watt at Mt. Carmel, William Newcomb at Carmi, Raymond Hale at Cottonwood, James Wade at Ridgeway, and Ora Funkhouser at Eldorado. At each place something of special interest was discussed. The distance traveled made it necessary that stops be short.

At the evening meeting a smoker contest was held, which excited a great deal of interest and merriment while furnishing diversion between the talks.

The third day the tour sarted with a visit to the apiary of Louis Vannis, the local inspector, and continued to Marion to see Otis Kelly, then to Charles Valerius at Elkville, Robert Zelder at Duquoin, Roy Annear at Mulkeytown, Roy Baxley at Christopher, and R. C. Meredith at Whittington.

At Mulkeytown the beekeepers met E. S. Silkwood, who was helpless with rheumatism for more than ten years and who has been relieved by means of bee stings, and who is now at work and in apparent good health.

Space will not permit detailed accounts of the many interesting incidents along the way. Nearly every stop offered something worth a little story all by itself. Professor Milum and Inspector Kildow are to be congratulated on the success of the tour.

Part of the group of beekeepers on the Third Illinois Bee Tour

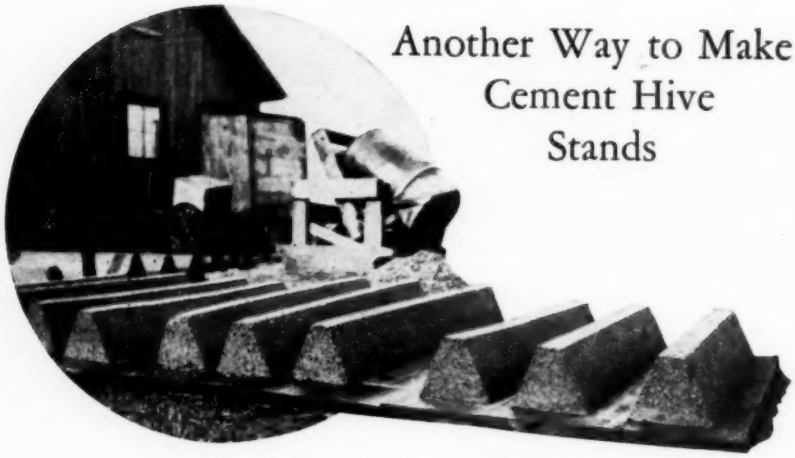
Two Bulletins from Rothamsted

We are in receipt, from Dr. D. M. T. Morland, of the Bee Research Institute of the Rothamsted Experimental Station, in England, of two short bulletins on bees. Mr. Morland visited us some years ago and appears to be a very practical observer.

One of the bulletins, "The Feeding of Bees," makes remarks that tally exactly with our experience in more than fifty years of practice. A very interesting statement of this bulletin relates to the fact that beet sugar is in every way equal to cane sugar for bee feed. These sugars are similar in their chemical constituents. This paper reports no advantage from mixing acid with syrup fed to the bees to secure inversion and prevent granulation. It is asserted much better to feed the syrup slowly enough to enable the bees to change it as they do the nectar which they gather in the blossoms.

The other booklet recommends keeping a hive on scales in every apiary and weighing it regularly at the same hour of the day. Stress is laid upon the fact that "it is surprising to note the weight of water added to a hive by a shower of rain." For that reason the author urges the beekeeper to keep his scale colony under shelter. There is no doubt that the changes in weight of a colony will help very much in ascertaining the conditions with which we must be acquainted if we expect to follow the ups and downs of the apiary.

Another Way to Make Cement Hive Stands



The blocks as they come from the molds

The dimensions of the cement stands shown in the picture are three feet long, two inches at top, six inches at bottom, and six inches deep, made of a mixture six to one. Sixty blocks out of five sacks of cement. The rest of it is easy to figure out for yourself.

The pictures show several stands as they look after they are poured and with the hives placed on them. They are quite serviceable. Not too heavy and last a long time. It is better to save the bottom boards than to let them rot out.

Theodore Keinath,
Michigan.

Apiary with hives on cement blocks, two hives to two blocks

Must We Drown in Our Own Honey?

By J. E. Crane

ONE of the pathetic sights that comes to a beekeeper is that of a bee drowning in honey. The bee has toiled laboriously to gather honey bit by bit, from the flowers, but now somehow or in some way, it knows not how, it is in it all over. This seems to be something of the plight of many commercial beekeepers. They have toiled for many years, using the most approved methods, securing large crops of honey until there is little demand for it at remunerative prices, so that, financially, they too are drowning in honey.

What is the trouble? Some say it is overproduction. Others say no more honey is produced than should be used and the trouble is underconsumption. Yet I believe ten pounds of honey are used today where one was used fifty years ago. I don't see as it matters much what the cause is; one thing is certain—like the bee, we are in it up to our eyes and the most important question now is, how are we to get out of it? How can we dispose of the enormous crops of honey this country produces and not get ruined by them?

Someone says, "Export it." We have tried it and have found that markets on the other side of the broad Atlantic give us little more than if sold here, although there may be a wide margin between the market quotations here and in Europe.

Another says, "Advertise; it pays to advertise," etc. How shall we advertise? Space in papers or magazines of large circulation is expensive. It doesn't pay to put $50 or $100 into advertising to sell honey worth $500. The grocer's shelves are already loaded with an immense variety of goods put up in the most attractive way, and well advertised to compete with honey. What are salesmen of fine address and pleasant manners, representing wholesale houses and calling on the grocers frequently to help push the sale of such goods as these, interested in?

Again there is a large margin for profit in many or most of the goods on the grocers' shelves. Take Shredded Wheat Biscuits. The cost of wheat is only two or three cents a pound, but the grocer sells the finished product for 15 to 16 cents a pound, a gain of 700 to 800 per cent. If honey retails at 35 cents a pound, there would be a gain of only 35 per cent over the wholesale price. Is it surprising that those who manufacture breakfast foods are able to advertise? What are we going to do about it? Shall we sit still and drown as the bee in honey? Not a bit of it. I believe the enterprise and push that have brought the production of honey up to its present high level will find a way to dispose of all the honey produced at fair prices.

Let me suggest two or three. They may not be altogether new, but may be helpful:

1. Let every beekeeper study carefully how he may reduce the cost of production. Two cents a pound saved in this way is equivalent to two cents added to the present wholesale price.

2. Let every beekeeper who can possibly spare the time retail as much of his crop as he can. It is surprising how much honey can be sold in this way at good prices. I know of one farmer who has a large dairy, keeps several hundred hens, runs a feed store, besides his bees, and I don't know what else. When his honey is off, he starts on the road and sells it at remunerative prices. The talk of overproduction or underconsumption does not trouble him.

3. Advertising. If we cannot afford to advertise in a large way, we may do it in a small, inexpensive way. It costs the beekeeper little to put up a "honey for sale" sign on his wagon or automobile, on his bee house or beside the road. If extracted honey is sold, labels that will cover the whole of a three- or five-

pound can may be used that will attract the consumer and tell much of the value of honey. Where cartons are used on comb honey, they can be covered with advertising matter that will be helpful and inexpensive. I believe we are selling tons of extracted honey in a retail and jobbing way today where we formerly sold a hundred pounds. But if all of these methods were used by beekeepers there would doubtless remain a large amount of honey to be disposed of through the retail groceries. If we cannot afford to have salesmen of our own, we may unite with some of these large companies to sell our honey for us. They have salesmen on the road who could look after the sale of honey with little extra expense, to our mutual advantage and profit. The great interest that is being taken in honey at the present time is a most hopeful sign.

The assistance the Kellogg Company is giving is of no small importance and should be appreciated by every beekeeper in our country. This is no time for listlessness or discouragement. Already there is a marked demand for honey, and in Chicago we notice the wholesale price is advancing.

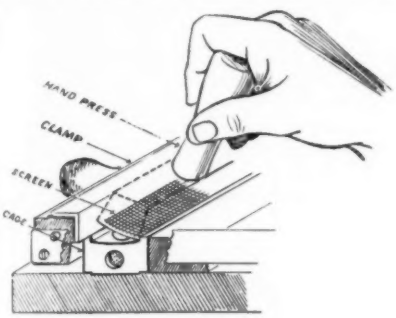
New Nailless Shipping Cage

A Labor Saver

By Marceille Conkling

A NAILLESS queenbee shipping cage comes as the result of much study and researeh on the part of A. B. Pinard, of San Jose, California. Mr. Pinard has been interested in the problem of shipping bees for a good many years, with results cumulating in the nailless cage.

This new cage promises to be a great help to bee men, for it eliminates all the time and trouble involved in using the magnet tack-hammer. Because there is not one single nail to be driven, the cage can be assembled in much less time. By actual test it has been shown that four of these nailless cages can be assembled while one of the old type is being put together. This means a saving of 75 per cent in time—a real service to bee men.

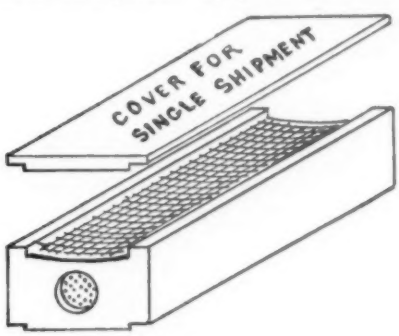


The cage is placed in a small clamp device while a wire screen is pressed into position.

This nailless cage is placed in a small clamp device while a wire screen, accurately cut so it will not ravel, is pressed into position with a small hand press. The operation is very simple, and the wire thus becomes firmly fixed into the top of the cage. So securely is the wire held in position that a 2½-pound weight, used for a test, pulling at its weakest point for twenty-four hours, failed to move it from its set position.

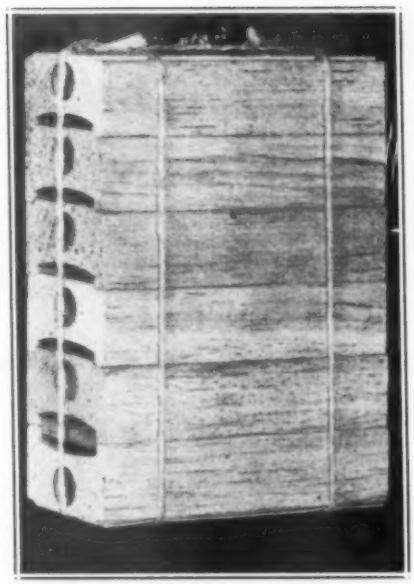
However, when it is necessary to remove this wire top—say after a virgin queen is introduced singly and you desire to let the rest of the bees out—just slip the blade of a pocket-knife under one edge of the screen wire, raising it high enough to permit an opening. After the bees have come out, the wire can be pressed back into position and it is again as secure as it was originally, yet not a nail has been driven.

The hole where the bees enter is drilled in such a way as to permit a small, perforated tin disk to work as if on a pivot. By pushing on the extreme edge of this disk with a match or nail, the disk can be removed so that the bees can be put in. This type of gate eliminates all chances of crippling the bees by cutting off legs or heads, as is so easy to do with the old regulation slip gate.



The cages may be sent separately through the mails; two sizes, three-hole and six-hole.

Bees are put into the cage in the customary way, holding the thumb over the hole after each one enters. After the last has entered, the perforated tin disk is slipped right under the thumb into the hole and the cage is closed. The disk can be pushed tightly into position with a wood punch.



A nest of six cages, ready for shipment. They are designed to fit neatly, one right into the other.

The hole on the candy end is drilled in the same fashion as that on the gate end. After the cage is paraffined and the candy is placed in the candy hole (this, of course, is done before the wire screen has been put into position), a small paper wadding specially cut for the purpose is inserted and pushed into position. It works on the same principle as the tin disk. Both the holes are cut in a special manner, so there is absolutely no danger of either the disk or the paper wadding coming out.

These nailless cages may be sent separately through the mails or they may be stacked. They are designed in such fashion that they neatly fit one right into the other and yet there is enough space to permit ample natural ventilation. They are made in three and six holes.

Because of its neat, compact form, the cage can be carried in the pocket, for there are no nails, no rough edges of any kind to catch. Mr. Pinard is to be congratulated on this achievement in the new nailless queenbee shipping cage. It is an invention which will no doubt, save hours and hours of labor for bee men. And best of all, it will permit them to get away from the monotony of handling the magnet tack-hammer.

Bees and Better Fruit

The magazine "Better Fruit," in its July number, contains an article by R. H. Kelty, of Michigan, discussing the question whether a fruit grower had best rent colonies of bees to fertilize his fruit trees or own an apiary himself. Very good advice is given, as might be expected from a man of Mr. Kelty's experience.

Lives of Famous Beekeepers

By Kent L. Pellett

MOSES QUINBY

Quinby adding largely to the knowledge of his predecessors, combined the whole into a system of practical management.

—Captain J. M. Hetherington.

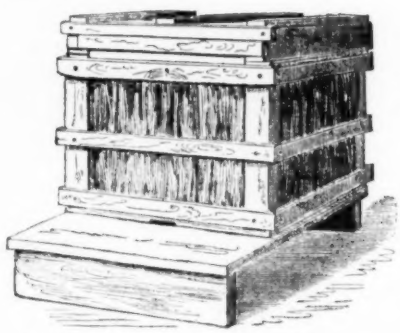
MOSES QUINBY was the first American to make of honey production a large-scale business. He was among the first to envisage honey crops vastly larger than the world had seen, to think of beekeeping as a business, on a par with other occupations.

Some of the Yankee farmers kept bees in the community where Quinby was born. But they had time for naught but a rough and ready bee culture. They kept bees in sawed-off, blocked-up logs, straw skeps, or, at best, in nondescript boxes; and cast the hapless insects of surplus colonies into the brimstone pit every fall. They crushed the honey from the combs, made candles of the wax, and put the dark "strained" honey on the table.

Bee lore, what there was, was largely a bag of tricks that they used for wheedling and outwitting Dame Nature and the bees. When a beekeeper stumbled on some secret among his bees, he was apt to keep it a secret. There is a certain narrowness bred in struggle, and in the strenuous business of carving homes out of a wilderness, these first American bee men often grew more shrewd than wise.

It was only after the land was cleared and settled and the homesteaders had achieved a certain amount of well-being that they had time to stop and look about them. Then they began to awaken to the meaning of their destinies in America. On the mere fringe of the continent, as they were, the inner territories seemed to stretch on forever. Here was more than enough for all, to be wrought as each one would. In contemplating this vastness they had dreams that their fathers, cramped in Europe, never had dared to have.

Some of the old narrowness sloughed away and the people expanded. They invented a magnificent array of tools, they learned to work together, they did things on a



Quinby straw hive with movable frames

bigger and yet bigger scale. Tales of their dreams and their accomplishments drifted back across the water. Europe laughed. What a race of braggarts they were breeding in America!

Into this expanding atmosphere came the first commercial bee men. They had the modern viewpoint, the modern way of doing things. They talked in terms of dollars and tons and large-scale production. It is true that their crops were pygmy compared to the big crops of today, but they were beginning to look at things as we do. Their achievements spoke the romance of the harvest, of doing big things.

Moses Quinby was a substantial man. Slow moving, deliberate, serious, his mind played on all sides of every question and moved at last to a sure conclusion. With an eye for the practical value of things, he made his twos count four and moved at his own deliberate gait through life, not refusing to be an inventor or an author on occasion, but having none of the uneasiness of spirit that often characterizes these men. The first great American honey producer was calm and efficient.

Quinby in 1810, was born of Quaker parents at North Castle, New York, and was reared on hard work, Quaker honesty, and a minimum of book education.

He went to work in a sawmill. When he was eighteen he bought a few colonies of bees with money he had earned at the trade. The bees aroused his curiosity and he spent much time with them. An old bee man of the neighborhood shook his head and gave the Quaker lad some advice: "Your bees will never do anything if you putter with them so much." Quinby continued to putter with them for the next fifty years.

He took a Quaker girl for his wife, set to the task of rearing a family, and supported them by working a turning lathe and making cabinets. With deft hands he fashioned pieces

that still were to be intact in half a century.

He did not neglect his bees, and was not slow to add to his backwoods lore with books. Among others, he studied the work of the English Bevan. He tolerated no slipshod hives in his apiary; and his neighbors were interested to learn that he did not brimstone his bees. Instead, he placed honey boxes on top of his hives, and made them attractive and saleable by putting glass sides in them. People liked to talk with him about their bees: he could say things in a practical, matter-of-fact way, and he understood beekeeping problems. Beekeepers fell readily into the habit of coming for instruction to this open-mannered Quaker who kept hundreds of colonies of bees, and who ungrudgingly told what he knew.

By the time he had reached middle age he was devoting all his time to beekeeping. He had a thousand colonies in his improved box-hives, and he shipped large amounts of honey to the New York market.

With the advent of the Civil War, the North lost its supply of southern sugar. Honey was greatly in demand. Beekeepers found new interest in their colonies and pushed them to greater production. Quinby, the last year of the war, harvested eleven tons of honey. The story of his harvest led hundreds of people to enter beekeeping.

But the Civil War came to an end, the demand for honey fell away and many beekeepers found it troublesome to market their crops. Some began darkly to hint that too many had joined their ranks. They must cut down production or all would be ruined. But Quinby was not worried. He admonished them that that was not the way of big business. Beekeepers should develop facilities for marketing their honey, he said, instead of using the brakes on production. Look at the cheese industry: in its infancy it had been in danger of being overstocked, but the cheese makers had been careful to cultivate markets as production expanded, and they never had found cheese more saleable than it was at that moment.

He liked to call attention to his bees. One year, at a Toledo fair, crowds watched him, a stocky figure in a large, peaked white hat, moving about the grounds. Bees passing to and fro from a hole in the peak of the hat brought milling crowds to a standstill when they passed him; and while they gaped he talked to them of bees. The throng packed more and more densely until Quinby became discomfited from too close attention. He flipped off his hat and swung it wide. Bees showered upon the heads of the onlookers, who overhauled one another in their haste to give way. Calmly the Quaker bee man replaced his hat. After his swarm had gathered again into the hole, he proceeded to a new spot and he was soon talking to another group.

Quinby's home in Montgomery county became a gathering place for progressive beekeepers. The Quaker taught them well. A Civil War captain took his first lessons of Quinby and later became the most extensive beekeeper in the world. That was J. E. Hetherington. And there was B. F. Holterman. And B. U. Alexander. And his own son-in-law, L. C. Root. All of them were men of influence among beekeepers.

In 1851 Quinby began to write a book which was to delineate his principles formed in the work of twenty-five years. To the east of him, in Massachusetts, a Congregational pastor also was writing a bee book. "Langstroth on the Hive and the Honeybee" and Quinby's "Mysteries of Beekeeping Explained" appeared at the same time, on the eve of great changes in the industry.

The two books were so similar in many of the practices they advocated and in the acute observation of bee behavior registered in them, that one appeared a plagiarization of the other. But there was no mutual suspicion between the two men. Each acknowledged that the other had done original work.

There was one large essential difference. Father Langstroth forecasted the beekeeping that would be ushered in with the new hive. Quinby told how to secure the best results with bees as they were, in box-hives.

Langstroth induced Quinby to try some of his movable-frame hives. But Quinby could not find for them the same enthusiasm as did their inventor. The bees troubled him by building crooked combs in the frames, and he declared that movable frames would not suit the average beekeeper, who would not take the trouble to procure straight combs or to learn how to manipulate them; yet, he said, every beekeeper should have at least one Langstroth hive for experiment and observation. In his edition of his book of 1866, he described the movable-frame hive with certain changes, such as the deepening of the frames, that he had made, and recommended it for more general use. This was the frame the Dadants adopted, and which was later to become known in the Dadant hive.

But after the advent of comb foundation and the honey extractor, which made the movable frame indispensable, Quinby still found the Langstroth hive not entirely satisfactory. He did not believe the spaces around the combs were natural. Bees would not winter well with them, he said. He took the Langstroth frames off the rabbets which supported them, made them fit snugly against the side walls. This was his standing frame hive. It was adopted by many of the prominent New York beekeepers. He used it until his death, and others used it until they, too, quit beekeeping. It was only to disappear after generations of beekeepers had found the hive of Father Langstroth more practical than that of the practical Quinby.

Quinby contributed one step in the evolution of the bee smoker. Bellows smokers had been used in Europe, but they were unwieldy and required two hands to make them go. Quinby placed the bellows beside the firebox and made the smoker small enough to be operated with one hand. But it still was unsatisfactory. The small firebox made it easy to upset, and coals often rolled into the bellows and burned holes in them.

Bingham seized upon the Quaker's ingenious idea and bettered the construction of the smoker by taking away the tube between the bellows and the firebox, which allowed a direct draft of air to pass from one to the other. He patented the improved implement. Quinby then improved his invention, and Bingham threatened to sue him for infringing upon his patent. Hot words passed, but the case never came to court. Between the two, they had given beekeepers an implement essential to commercial beekeeping. They might both have been content.

Quinby helped to bring into being the Northeastern Beekeepers' Association, and was its first president. He was for one year the president of the North American Beekeepers' Association. He realized the value of cooperation, of the spreading of men's ideas.

He wrote during the latter part of his life for the magazines. His articles were not frequent, and they were not entertaining when they did appear. Flourishes in his words did not occur to him. Absorbed as he was in his work, he packed his writings with experience, and facts. But his pen unwittingly told a romance all its own—the romance of good workmanship, of success, of big harvests.

It was all a great game to him, an absorbing, compelling game, if, withal, a serious one. He once told his son-in-law, with deliberate emphasis on each word, "I want it distinctly understood that I cannot afford to spend any time making money!"

His mind was never more keen than in his last years. His life had been ordered as had been his apiary. Busy with his orchard, his bees, his trout pond, he yet had time for happy hours with friends. Living slowly, he lived well.

Honey and That Same Wife of Mine

By Grace Willey Wakeman

More 'an jes plain ashes and dust went into the makin' of women—the Pandora box 'at produced 'em wur full o' gunpowder

DOGGONE women, anyhow! If they ain't the beatenest critters ever created! Seems ter me there must be somethin' more 'an jes' plain ashes an' dust went inter the makin' of women. I'm suspichin' there's a good bit of gunpowder in their makeup. Most times the gunpowder takes fire when they's young, an' them's those long-legged, painted-faced, chestnut-haired critters you sees squirmin' about the streets everywhere nowadays. I 'spose when the gunpowder plays out they'll settle down an' be more sensibler.

But my Sarah now—she was different sorta. Sarah an' me's been married nigh onter twenty years, come October, an' till a month ago a sensibler, abler an' a modester a wife you wouldn't find nowhere. I supposed there weren't no gunpowder in her makeup. But it seems like in her case, for some reason or tother, it misfired in her youth when you'd think nothin' of her being a bit foolish; but to have her go off now, after twenty years of bearin' an' bathin' an' spankin' an' darnin' an' scrubbin' an' feedin' of five of the sturdiest youngsters you ever set eye one—well, it jes' plumb takes a feller's breath away an' makes you feel there's no trustin' the critters nohow.

Now, I'll tell you jes' how it all happened. So long as Sarah had a child in the house to fuss and fume over, a-toilin' from early mornin' until late at night, Sarah an' me was uncommonly happy. She never wanted to go nowhere. Seemed like she was jes' happy ter be workin' or sewin' or darnin' all the time. One thing Sarah was allers doggone stubborn about, and that was that all our youngsters should be better educated than we is. So the eldest boys is at university now or nearin' it and this year Baby Sarah went away ter high school. I allers thought that Sarah's highbrow notions about education would turn out bad somehow, and now it's gone and done it. I was afeared it would go ter the youngsters' heads, but it 'ppears like it goes ter Sarah's.

She allers was an uncommonly active woman, was Sarah, an' now it seems, with all the children gone, she ain't got enough ter do ter keep her out of mischief. Some people is like that.

Well, the first thing I noticed queer about her was that she'd spend hours every afternoon locked in her own bedroom. I thought maybe she's takin' to sleepin' in the afternoons, a thing she never done, but seein' that she's not young any more, bein' thirty-seven, I s'pposed this was only ter be expected. Howsoever, one afternoon she forgot ter lock her door an' I peeped in careful like so as not ter disturb her in case she was a-sleepin'. I'll be blowed if she weren't a sittin' before the lookin'-glass smearin' a jar of my best honey on her face an' sorta playin' in it—rubbin' her fingers around in it on her face an' a-pullin' and a-stretchin' it out in strings like a kid plays with his gum.

A-sittin' before the lookin' glass, smearin' a jar of my best honey on her face

There was a chair jes' inside the door, so I set down easy like, thinkin' she'd need watchin' in case she showed signs of becomin' violent.

She monkeyed about a bit longer, patting great dabs of honey on her face and then pullin' it off again, at least a-tryin' to, but it got all ropy an' woudn't come off worth a cent. I thought she'd get mad at it, but she didn't. By an' by she took a hot towel off the radiator an' patted her face with that. That seemed to do the trick; the honey stuck ter it. Then she took the witch-hazel an' slapped that all over her face an' neck, slappin' herself most all-fired hard, I thought. When she got through the whole performance her face looked parboiled, but she seemed as pleased as punch with her looks. Next she picked up an orange stick an' dabbed it in the honey an' started rubbin' it about in her head.

This was too much for me; I couldn't keep quiet no longer. So I jumps up an' yells, "See here, Sarah, if you have gone clean, stark, ravin' mad, you don't need ter be wastin' my best honey. What in Sam Hill do you s'ppose I fuss with bees all summer for? For you ter mess your hair up with?"

She was what you'd call superb, I suppose; she actually smiled, "Cyrus dear, you don't understand. Honey is a pure food. It nourishes the hair and when used as a pack in treating the skin it not only feeds it, but it tightens and cleanses the pores of the skin, lifts the sagging muscles and removes wrinkles—"

An' on she went like an advertisin' agent. Finally she wound up with:

"Now that our children are off our hands, it is our duty to renew our youth and look smart for their sakes. Come, Cyrus, let me give you a honey pack, my dear; we can't have our children being ashamed of us."

"No siree, Sarah," says I, "you can put all the honey inside of me you like, but when it comes ter smearin' it about on the outside I draw the line."

Sarah is quite harmless, howsoever, except in the amount of honey she gets away with. She drinks it in hot water night an' mornin'. She mixes honey an' cream an' lemon an' rubs it all over her hands an' arms an' so on. She rolls a lump of honey around in her mouth before she goes out, ter make her breath sweet. She even makes a honey soap an' uses it for her bath.

Yes sirce, Sarah's clean bugs about honey, but it 'ppears like when that gunpowder in her makeup went off it carried away ten years or more off'n her age. She ain't so sensibler an' modest like, an' her legs look uncommonly long, but today there ain't a smarter, better lookin' woman around this countryside than that same wife of mine.

When Does Red Clover Yield a Honey Crop?

By Dr. O. W. Park

A few bees are to be found gathering nectar from red clover (**Trifolium pratense**) almost every season here at Ames. In a considerable number of instances, well informed beekeepers have reported crops of honey secured from this source. Although such cases are not common, it is scarcely to be doubted that honey crops are obtained from red clover occasionally.

The two most common explanations of these occasional yields are that the corolla tubes become shortened by drought or that, under exceptional conditions, nectar is so abundant that it rises higher than usual in the corolla tubes. It is quite possible that either explanation alone, or in combination with the other, could be responsible in a given case. Still other factors may be involved and the cause need not be the same in all cases.

It would seem that the cause must lie with the clover and its environment rather than with the bees, because longer-tongued insects, such as bumblebees, obtain nectar from red clover quite regularly. The shortening of the corolla tubes by drought sounds logical enough, but measurements made some years ago by Dr. Pammel, of the botany department of Iowa State College, cast doubt on this theory. The various conditions under which nectar may rise high in the corolla tubes are not yet thoroughly understood, but recent studies by the writer suggest that, in some instances, there may be a direct connection between atmospheric moisture and honey production in red clover.

Both the volume and the moisture content of nectar were found to change greatly with changes in atmospheric humidity. This was particularly true in such flowers as basswood (**Tilia americana**), milkweed (**Asclepias syriaca**) and the clovers (**Trifolium**). The simplest explanation of these facts seems to be that, when the air is hot and dry, moisture evaporates from the nectar, thereby reducing the quantity, whereas, under humid conditions, the nectar absorbs moisture from the air, for it is well known that sugar solutions possess this faculty. Hence there is more nectar during humid weather, but it is thinner than in dry weather.

Such dilution of the nectar must be a distinct disadvantage in the case of flowers in which the bees have no difficulty in reaching the nectar, because of the larger amount which must be gathered and ripened for each pound of honey stored. But in the case of red clover and other flowers having deep corolla tubes, the increase in the volume of nectar due to absorption of moisture from the air may sometimes make all the difference between a honey crop and no honey crop.

Post Cereals Now Use Honey

The American Honey Institute recently forwarded the advertising, reproduced below, from the New England campaign of the Post Cereal Company. The prominence given to honey is, of course, gratifying to beekeepers, since it again enlarges the outlet for their product and carries the message of honey to many consumers.

CORN FLAKES more delectable than you ever tasted before are at your grocery store. Post's Corn Flakes—corn flakes so much *better*, so much more delicious, that in a few short months they have become the new favorite of thousands. The sweetness of malt syrup and honey is toasted right into them. The sweetness of malt syrup and honey—just taste the difference when you take home a package of Post's Corn Flakes! . . . Your grocer has them—buy them today.

CARNIOLANS

Very gentle,—can be handled most of the time without a veil. How comfortable to work without a veil! Why put up with irritable, stinging bees? For this reason alone Carniolans are worthy a trial. Carniolans are very prolific, keeping their hives populous at all times, produce most beautiful ocmb honey, use but little propolis, little inclined to rob, and are most excellent workers. Carniolans will fly on cooler and more windy days than other bees, making them very valuable for pollination purposes. Put in some Carniolans this month if you use bees for pollination. Queens introduced in September are practically young queens for next season. They are less likely to swarm next year than queens introduced earlier. Many queens reared early in the South prove disappointing. Try some September Carniolans this season.

Untested queens, one	**$1.25**
Untested queens, six	**6.60**
Untested queens, dozen	**12.00**
Tested queens, each	**2.00**

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with the three-speed drive, is the only radial extractor made which gives the operator full control of the speed at all times.

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New Westminster, British Columbia

THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

CHANGES IN NECTAR

Some time ago I had a talk with our local doctor, and he asked me a question that I could not answer, so I am shooting the question to you.

The question is: What is the change made in the nectar from the time that it is taken from the flowers till it is deposited in the cell of the comb?

The doctor says there is a lot of difference in the honey of a bumblebee and a honeybee, and thinks there is some change made before it is deposited in the cell, as both bees are in the same locality and gather nectar from the same flowers.

OHIO.

Answer—The nectar in the blossoms is saccharose, or cane sugar. During its stay in the honey sac most of it changes to glucose, or grape sugar. But you must not confound this glucose with the commercial glucose of commerce. This change is due to the presence in the honey sac of the acid of the saliva of the bee.

As to the honey of the honeybee differing from that of the bumblebee, the main reason is that they do not harvest the nectar from the same flowers, although there may also be a difference in the quantity of it in the honey sac and the proportionate difference in action of the saliva of the bee.

CONDITIONS IN MASSACHUSETTS

1. What is the most dependable honey-producing plant in Massachusetts?
2. Are basswood trees plentiful in New England?
3. What is the difference between Carnolian and Carniolan bees?
4. Are there any large apiaries in Massachusetts? MASSACHUSETTS.

Answer—1. White clover and alsike clover have very good reputation in Massachusetts.

2. Basswood trees are plentiful in spots. You would need to investigate to find the best spots.

3. Carniolan bees are from the province of Carniola, northeast of Italy. There are no such bees Carnolian. It is a misspelled word.

4. Yes, there are some large beekeepers in Massachusetts, but not so many as in New York or California.

ALUMINUM AND CEMENT FOR HONEY

1. Is there any danger in keeping honey in vessels of aluminum?
2. May cement tanks be used for storing honey without any previous coating of the cement with paraffin or some other stuff?

BRAZIL.

Answer—1. I have never kept honey in vessels of aluminum, but I do not think that there would be the least danger in it, because honey has no properties that I know of that might deteriorate the aluminum.

2. Cement tanks will certainly do for honey, but it would be much better to coat them with wax or paraffin in order that the honey may be removed more easily from them.

FERMENTING OF SEALED HONEY

Please advise me what to do with my comb honey. It is all going sour and running out of the cells, even when they are all capped over. It is sour when I take it off of the hives. What causes this? What can I do to stop it? NEW JERSEY.

Answer—Here is a very good example of what we have often said concerning unripe honey sealed over by the bees. The honey was too watery when harvested, and it appears that the bees were unable to ripen it, either from too much moisture in the atmosphere, too much cool weather, or too great a yield for the few days when bees could get nectar, or from all of these causes.

I would advise either to extract the honey or return it to the bees. If you extract it, which would be the best thing to do, heat it over a slow fire and over water "au bain-marie," as the cooks say, so as to evaporate all the extra moisture. The honey will never be of first quality, but it will lose the ferment and a part of its acidity and will be fit to use or to feed the bees in spring.

MANAGING EUROPEAN FOULBROOD

At the time of inspection I had three hives of European foulbrood. One hive swarmed and cleaned up while waiting for new queen to lay; have one hive in two ten-frame hive bodies and one in Jumbo hive. The Jumbo was the first infected, and the worst. It has outside combs clean. I was thinking of taking them out and filling with dummy frames to reduce space in hive. Would you think it would be the way to do?

Please tell me how to handle the double hive. Would it be all right to put in queen excluder and de-queen for ten days? Sup pose I should put the two hive bodies on other hives above queen excluder. Would they infect lower story? I would thank you to tell me how to handle the infected hives to get rid of it. I had two hives last year; got one cleaned up, but failed on one. I have fifty colonies and am anxious to be rid of the disease. INDIANA.

Answer—I would reduce the colonies down to one brood chamber, by removing all the combs that have no brood. Then I would either cage the queens for twenty-one days or remove them entirely and replace them in ten or twelve days. As reported in every direction, by causing all the brood to hatch and allowing no more brood to be reared until it is all hatched, colonies are made to cure themselves of European foulbrood, since they carry out all the diseased and dead brood.

But you must make very sure that your colonies do not have American foulbrood also, for this cannot be cured so readily. As you speak of "inspection," I suppose your state inspector has made sure of the nature of the disease.

QUEENLESSNESS FOLLOWING EXCESSIVE SWARMING

I had one stand of bees this spring that swarmed three times that I know of. Then I put on the queen and drone trap, which I removed four days ago, but I have noticed that for a month or more the bees are working but very little. You would almost think the hive empty, but bump it and they are out in a hurry. The three new swarms are working fine. So I was wondering if this hive could be queenless. What are the characters and symptoms of a queenless colony? Is it too late in the season to introduce a queen? Will the bees carry over till spring if they have no queen?

ILLINOIS.

Answer—If you placed a queen and drone trap on the hive shortly after the issue of its last swarm, you may have prevented the queen from going out to mate. In that case, she is either missing or drone-laying. As you state that they do not fly out much, I take it for granted that they are queenless. The way to find it out is to examine

the hive on the inside. If they have no worker brood, they are queenless.

It is a little late to introduce a queen. Yet, if you can secure a queen promptly from some breeder, you may yet succeed in rebuilding the colony. Much depends on whether they have enough bees left to breed. By giving them some food, to induce breeding, you may yet save the colony.

It would be very doubtful if the colony could live till spring if they have no queen, as the bees keep on dying off and it would be some time in spring before you could get a queen introduced.

You should read a textbook on beekeeping. It would pay you to do so. I enclose a circular of bee books.

HOW MUCH HONEY SHALL I TAKE OFF?

I just received a copy of your Journal. I consider it a treasure. It will give me an impetus to stick to this fascinating occupation.

The eighth of May, this year, I bought two pounds of bees from a California firm. I fed the bees for six weeks. In twenty-six days I saw the first young bees; it could not be any sooner, as there was no drawn comb, but foundation. Three weeks later I put on another hive with foundation and let the queen have the run of two stories. Later on I put on an excluder and gave them another hive with foundation. They are all completely full at this time. Now I don't know if I should take the honey from the upper two hives and feed them twenty pounds of granulated sugar. The bottom hive I will not touch. However, I suppose I must keep the bees in two hives; I don't think all the bees would have room enough to winter in one hive. I built a strong bee house 8x12 feet, where I will winter them. MONTANA.

Answer—You do not state in your letter what is the size of those hives. If they are ten-frame hives, a single story well filled will probably be sufficient for wintering them. But if they are only eight-frame hives, it will require two stories, especially in your climate, in which the winter is longer than here.

A colony of bees requires about forty pounds of honey to carry it through the winter and spring till there is something in the fields.

As to removing most of the honey and feeding them twenty pounds of granulated sugar dissolved in about a gallon and a quarter of water, it will do, if you feed early enough for them to store it in the combs. If you wish to winter the colony in the cellar, the sugar syrup will be very good feed.

UNITING STRAY SWARM WITH FULL COLONY

1. I put a hive in the lower limbs of a tree about one-eighth of a mile from my four colonies of bees, and a black swarm has entered it. Can I add them to a weak colony of my yellow-banded bees? How and when can I do this? Or had I better wait till cold weather and kill them and take the honey?

2. How can I tell if the queens in any of my hives need replacing? KANSAS.

Answer—1. When the weather gets cool, open that colony of black bees and kill the queen. The next evening, move it next to your weak colony, and the following day unite it to that weak colony. It is a good plan to let them know about the change of location by disturbing them considerably at the time of moving. I believe it will pay you to unite the two colonies, giving the united colony all the brood.

2. If your queens are prolific and you do not know their age, better let them live another year. But if any are over two

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10 pound pails 50 in carton	$9.50	$46.00	$88.25	$8.00	$39.25	$76.75

	From Grand Rapids		From Chicago or Detroit		
	One box	Ten boxes	Ten boxes	50 boxes	100 boxes
2½ pound cans 24 in wood box	$1.15	$10.00	$9.50	$45.00	
5 pound pails 12 in wood box	$1.10	$10.50	$9.00	$44.00	
10 pound pails 6 in wood box	$ .90	$ 8.00	$7.00	$32.50	
60 pound cans 2 in wood box	$1.10	$10.00	$9.00	$43.50	$85.00
50 bulk crate	Per crate $17.50		Per crate $15.00		

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1 pound 2 doz. in pkg.	1.25	11.50	26.25	50.00
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years old, better change them. Of course, if any of them are not prolific, change them anyhow.

SACBROOD AND SUPERSEDURE

I have a colony of Italian bees (three-band) which I suspect is suffering from some sort of brood disease, and, in line with your suggestion in a previous letter to me, I have sent a sample to the United States Department of Agriculture for examination.

I believe the trouble is sacbrood, and, as I understand it, this is not regarded as a serious disease. However, if this is what is wrong, I want to do what I can to eradicate it, and will appreciate your advice on the following:

The queen is in her second year, and, while she seems to be keeping up with her laying, several times the past month I have found queen-cells in process. The swarming season is over and the drones have all disappeared. These bees have ample room—two hive bodies and two half-depth supers, although they are only working in one super now. The honey season is about over.

a. Do you think the bees are preparing to supersede the queen? Do you think the queen may be failing?

b. There are no drones in the hive. I have only this one colony and I do not know of any other bees near me. If you think the queen is failing and the bees are preparing to supersede her, would you advise making an attempt to raise some drones by artificial feeding, or would it be better to buy a young queen from a breeder?

c. The trouble, whatever it is, that affects the brood seems to be spreading. If it is sacbrood, and the present queen is failing, would a young queen be likely to check this trouble? The colony is quite strong now and has ample stores. Would a failing queen likely be responsible for the spread of sacbrood in a colony? TEXAS.

Answer—a. I believe that the bees are preparing to supersede the queen, although she may not be very poor yet.

b. I would hardly try to rear drones this late in the season. Besides, it would be better to have a queen mated with drones from other colonies than with her brothers. So I would prefer to buy a young queen from a breeder.

c. The knowledge we have of the causes of bee diseases is so inadequate that it would be folly for me to assert that sacbrood was caused by the poor quality of the queen. But if your colony is not very populous, I would reduce the space which it covers to one brood chamber, as the bees may not be able to keep the brood as warm as it ought to be.

WHAT TO DO FOR E. F. B. IN TWO-STORY COLONY

1. What would you suggest my treatment of a doubled-up colony of bees apparently with European foulbrood? I have had them queenless for two weeks. They have a young queen which is not laying. She is small and I do not know whether or not she is any good. There is nothing now left on the combs but sealed brood, and that has bees in sealed cells which may or may not hatch. They are fully developed, but look white, and I am afraid are not much good. All foul matter, etc., has been cleaned up.

Is it not too late in the season to expect any queen to lay and hatch enough young bees to make the colony worth keeping as a seperate colony? NEW YORK.

Answer—1. I suggest that probably by the time this reply reaches you the queen will be laying, if there are any drones left, and will probably appear larger than she did when you wrote. If there was nothing but sealed brood left, it would indicate that there is no longer any dead brood. As to the sealed brood appearing white before they become chrysalis, it is the proper color. Give them a little time.

2. Of course, much depends upon the strength of the colony. But you can induce your young queen to lay, by feeding

the colony a little. If they are strong in bees, all may be well if there is plenty of food.

SHALL I FUMIGATE COMB HONEY BEFORE PLACING IN CARTONS?

Will I have to fumigate comb honey before putting it in air-tight cartons in order to keep moth from getting into it?

INDIANA.

Answer—If your honey is removed straight from the super of a strong colony of bees, the sections cleaned as usual, there will be no need of fumigating it before putting it up in cartons.

It is only when combs are allowed to remain for a while in a honey house, where moths may enter, that it is necessary to fumigate. We often find it advisable to fumigate a honey house by burning brimstone in the room, in a metal holder. This will also kill the flies that may gather in the room.

IF BEES CHEW PAPER, WHY CAN'T THEY INJURE FRUIT?

The bee men say that a bee put on sound, ripe fruit would starve. How is it that a bee can eat away paper when united and chew foundation or wax, and remove queen-cells? I have a neighbor who said my bees were eating his peaches last year. I told him that birds would peck them first, then the bees would sap the fruit. He said we didn't have humming-birds in this country. He said the bee would sap the peach until it bruised the fruit, and that he would see what could be done if it wasn't stopped; he would spray them, or do something. This happened last year. I live in the edge of town. My bees go south to the field. I have thirty hives in town, and started an out-of-town apiary one-half mile south of the river, twenty-five hives, all ten-frame.

KANSAS.

Answer—Bees can chew paper because paper has little projecting substances which you cannot see with the naked eye, but which show when you use a microscope. The fruit is smooth in skin and the bees cannot bite into it any more than you can bite into a smooth plaster wall. As to combs and cells, they are of their own making and of course tender enough for them to bite.

If bees could bite into fruit, they would be able to get honey out of red clover, by biting the corolla. But they do not do it.

In the summer of 1879 there was no honey and no fruit except grapes. Our neighbors said that our bees were eating their grapes and they wanted a law passed preventing anyone from owning more than twenty stands of bees. The birds were doing the damage, but we could not convince them, although we had tried putting sound grapes inside of hives of bees and they were not eaten. We concluded that the only thing to do was to plant more grapes than any of our neighbors had. We did. We planted five acres, and in the season 1886 we harvested 45,000 pounds of grapes. That stopped the neighbors fussing and we never had trouble since.

CHANGING TEMPER BY REQUEENING

For some reason, one of my colonies has gotten unusually mean, and for that reason I have thought of destroying the hive.

Some bee men have told me that if I would get a tested queen and introduce her in this hive at the present time for another year, they would be altogether of a different nature.

Kindly let me know if this could be done, and, if so, could you recommend someone that sells queens that would be gentle and adapted to this country?

TEXAS.

Answer—Yes, we have often changed the temper of a colony by changing the queen.

I believe any one of the American Bee Journal advertisers of Italian bees will furnish you a queen that will produce gentle bees, especially if you mention your desire when you order the queen.

BEES GNAWING AT ENTRANCE

I have two colonies of bees that seem to have a great deal of work to do on the entrance board of their hive, by working their bodies back and forth as though they were trying to gnaw at it. I cannot see what they are doing while working that way, or what has been done when they have gone into the hive at evening. I would like to know why they perform this way instead of going out into the fields and working as the others do. ILLINOIS.

Answer—This maneuver has been noticed many times, both on the alighting board and on the sides of the hive near the entrance. It is generally indulged in when there is no honey in the fields, and it has been suggested that they are painting the alighting board with propolis, because it has been noticed that after this performance the board is shiny with a very light coat of propolis.

We cannot assert that this is the proper answer, but until a better one is supplied it will have to do.

MEETINGS AND EVENTS

Current association meetings and organization notices are published in this department each month. Secretaries and other officers of organizations who wish publicity here should make sure that notices are sent in before the fifteenth of the month preceding publication. Frequently notices are received too late for use and consequently do not appear at all.

Seventy-five Beekeepers Attend Annual Convention in Texas

With an attendance of seventy-five beekeepers, the annual Texas convention was held at College Station in connection with the farmers' short course, July 29 and 30. This was the fifty-second summer gathering, and among those attending were men who had not missed a meeting for thirty years.

T. W. Burleson reported the work of the American Honey Producers' League and advised the association to continue its affiliation. H. E. Coffey reported the results of honey selling by the Nueces Valley Beekeepers' Association. W. O. Victor reported the activities of the Uvalde Association in the protection of their sales territory against mislabeled honey and similar commodities. E. W. Cothran, representing the Northeast Texas Association, reported that they had been successful in developing local sales that took most of their honey crop.

The discussion of cooperative marketing was concluded by the adoption of a resolution calling a meeting of all beekeepers interested in forming a selling association to meet at the Plaza Hotel, San Antonio, September 2 and 3.

Allen Victor, of Taylor, was elected president of the association; T. W. Burleson, of Waxahachie, vice-president, and H. B. Parks, of San Antonio, secretary-treasurer. T. W. Burleson was also named as the delegate to the meeting of the American Honey Producers' League at Milwaukee in February. E. A. Ribble, of Paris, was made delegate to the Southern Sates Beekeepers' Conference at Baton Rouge, Louisiana, also in February.

The Texas Queen Breeders' and Package Shipping Association, which met at the same time as the state association, elected officers as follows: W. O. Victor, of Uvalde, president; Roy Weaver, of Navasota, vice-president; H. E. Coffey, of Whitsett, secretary-treasurer; H. B. Parks, delegate to the meeting of the Southern Beekeepers' Conference.

The bulk of Texas honey has been marketed at prices around 10 cents for extracted and 12 cents for comb. The feeling of those at the meeting was optimistic and encouraging, but everyone agreed that a buying and marketing cooperative organization has become essential for the protection of the industry in the state.

North Dakota and Red River Valley Associations Have Great Meeting at Hillsboro

North Dakota beekeepers met July 24 at Hillsboro in a well attended meeting. The forenoon program was in the city park and the afternoon session was held in the vicinity of one of the large apiaries of Charles Hausmann, commercial beekeeper and president of the association.

The Civic Club of Hillsboro entertained the beekeepers at noonday luncheon, and at the afternoon session the beekeepers were invited to a luncheon provided by the Rotary Club of Crookston, Minnesota.

The major portion of the Red River Valley program was held at the Northwest School of Agriculture, at Crookston. An interesting visit to the apiary of the Sisters of St. Benedict was arranged, where a display gotten up by the sisters showed honey and its use in the making of cooked foods and as a sweetening for salads and desserts.

Speakers included George Rea, previously field man of New York State and now commercial queen breeder at New Bern, North Carolina; Prof. L. T. Floyd provincial apiarist of Manitoba, Canada; Dr.

M. C. Tanquary, now of the University of Minnesota at St. Paul; Dr. Harold Clay, market news specialist, Bureau of Agricultural Economics; E. P. Fisher, of the Northern Cold Storage and Warehouse Company of Duluth; W. D. Wright, commercial beekeeper of Souris, Manitoba, and Mr. E. E. Salge, package bee shipper of Weslaco, Texas.

The Mountain States Honey Producers' Association was represented at both meetings.

Field Agent Anderson Visits Uintah Basin

A. W. Anderson, field agent of the Mountain States Honey Producers' Association, recently visited the Uintah Basin and reported conditions excellent there. Mr. Anderson is doing a good work with the association, causing improved means of production and spreading information on the control of disease in his position as inspector. Of course, he spreads the news of cooperative marketing and organization so that beekeepers may do better in their industry.

Utah Traffic Association Wins Fight Against Rate Increase

Beekeepers and honey dealers in Utah are rejoicing over the fact that the Utah Shippers' Traffic Association has won the fight against proprosed rate increases between Utah and adjacent states. Honey and candy industries were affected seriously by the increases proposed by the Interstate Commerce Commission.

Intermountain Region May Have World's Largest Honey Pool

The home of the world's largest honey pool may be located in the intermountain region. After two years the Mountain States cooperative controls the largest block of honey of any honey selling group in the world. One of the largest honey pools has been assembled in New Zealand, shipping about one hundred tons of honey last year, but this is only about one-third of the Idaho crop.

The Mountain States cooperative now has 385 members, operating 89,000 colonies in the states of Montana, Wyoming, Idaho, Oregon, Washington, and Minnesota.

The 1927 crop, the first handled by the cooperative, was 145 carloads, the honey handled within the pool totaling 3,656,880 pounds, selling at the average price of 7.445 cents for white honey, which constituted the bulk of the market volume.

The second year of operation, the 1928 crop saw 5,000,000 pounds handled, none for less than 7 cents, and in the spring the price was 8 cents, the total business turnover being about $400,000.

Out of the 145 carloads marketed in 1928, 75 were sold to Germany, England and Scotland. The rest of it was sold in the United States.

The honey produced in the territory of the Mountain States cooperative is of exceptionally high quality, the bulk of the production being uniformly white honey.

Figures now indicate that last year Idaho produced 206 carloads of honey and shipped all but ten to fifteen carloads, which were consumed at home. Utah produced 120 carloads, about 50 per cent of which was consumed at home.

Glen Perrins, Utah.

Ogle-Lee County Meeting (Illinois)

The Ogle-Lee County Beekeepers' Association of Illinois will hold their next meeting in the Polo Theater on Wednesday, September 18. There will be shown several films on beekeeping and a set of slides on general beekeeping subjects.

The meeting will be called at 10 o'clock in the morning. Everyone invited.

George L. Sauer, President.

Wisconsin Summer Beekeepers' Conference and Chautauqua

Reported by E. W. Atkins

Approximately one hundred beekeepers and many of their families spent three delightful days at one of the best educational and inspirational meetings that it has been the writer's pleasure to attend. This meeting was held in the beautiful Myric Park under the bluffs of the Mississippi River at La Crosse, Wisconsin. Special camping and parking privileges were extended the beekeepers by the city of La Crosse. In addition to a large number of prominent beekeepers from Wisconsin who attended the meeting, there were a number from Iowa, Illinois, Michigan, Indiana, and one from Pennsylvania.

The keynotes of the meeting were optimism in the future of the industry, cooperation to further the consumption of nature's best sweet—honey—and great efficiency in production.

The meeting was dedicated to Mr. Gus Dittmer, of Augusta, Wisconsin, who has devoted his life to beekeeping.

Much credit is due to Prof. H. F. Wlson and his associates, first for the attractiveness of the site of the meeting and, second, for the excellent, well-balanced, educational, inspirational and entertaining features of the program. Dr. M. C. Tanquary, president of the American Honey Producers' League, now in charge of beekeeping in the state of Minnesota; Dr. Paul O. Sampson, of the Battle Creek Health Food Company, Battle Creek, Michigan; Miss Fischer, secretary of the American Honey Institute; Mrs. Cornforth, of the Kellogg Company; Dr. V. G. Milum, of the University of Illinois; C. L. Wright, secretary-treasurer of the Erie County (Pennsylvania) Beekeepers' Association; O. A. Lende, representative of the Mountain States Honey Producers' Association; E. R. Root, of the Root Company; Francis Jager, and many Wisconsin authorities took part in the program.

Everyone concluded that they had never heard a more entertaining, logical and clear talk on the value of honey in the human diet than the address of Dr. Paul O. Sampson—"Sweets, Their Uses and Abuses."

No Wisconsin meeting would be complete without its banquet. During the second evening a banquet was served in the park and Mr. E. R. Root acted as toastmaster. During the evening Mr. Gus Dittmer was presented with a beautiful desk fountain pen set by the beekeepers present in commemoration of his work in helping to build up the beekeeping industry. The remainder of the evening was spent in fun and laughter due to the numerous stories pulled by the evening speakers, who were in rare form.

Honey a Delegate to the American Medical Association Convention

For the first time in history, honey was prominently represented at the convention of the American Medical Association. During the week of July 8 to 13, Portland, Oregon, played host to physicians and surgeons from the entire United States, and among the displays arranged for the benefit of the visitors was one featuring honey.

Each year, at the convention of the American Medical Association, exhibits of surgical instruments, health foods and other articles of especial interest to physicians are made in connection with the assembly. Only such items as are approved by the American Medical Association as of sterling worth are permitted among the exhibits. It is considered as a great privilege to be allowed to display at this convention. The health values of honey are now officially recognized by this association, which is anxious that its members become familiar with the various uses of Nature's sweet. The display was made under the auspices of the American Honey Producers' League and was prepared by the Pacific Slope Honey Company under the direction of the Mountain States Honey Producers' Association, cooperating with League.

The display consisted of an assortment of sizes of gless jars of honey tastefully arranged in front of a large background which depicted several scenes—an athlete in action, a hospital cot with patient and nurse, a baby with a bottle, etc. Ribbons attached to the jars of honey in the foreground led to the various pictures, thus bringing out at a glance the fact that honey was an energy food for athletes, a strength builder for the sick, a milk modifier for infants, etc. Another smaller picture showed a cow, grass, and a bottle of milk paralleled by a bee, a flower, and a jar of honey. The caption, "Nature's Foods," completed the comparison. In conjunction with the display a demonstrator served Kreme Whipt honey and handed out mimeographed sheets carrying condensed information of a nature destined to point out to physicians the great value of honey as a health food and as a natural medicine.

1928 Illinois State Beekeepers' Report

We have just received the twenty-eighth annual report of the Illinois State Beekeepers' Association, edited by Secretary V. G. Milum, Champaign, Illinois. It is a very informative publication, not only giving the report of the year, including the activities of the state association, the county association and the inspection service, together with a list of members, but articles of a practical nature which make the book a valuable one for the beekeeper's library.

Here are some of the titles that catch our eye: "Weighing Bees for Profit—The Use of the Scale Colony," by M. G. Farrar; "Practical Hints on Saving Beeswax," by H. C. Dadant; "Honey Production," by F. G. Paddock; "Color, Flavor, and Clarity of Honey," by H. H. Root; "Preparing Honey for Market," by C. Swanson; "The Use of Honey in Ice Cream," by P. H. Tracey, of the University of Illinois; "Relation of Frut Growers and Beekeepers," by Frank C. Pellett; "The Temperature Relations of Honeybees in Winter," by V. G. Milum.

Canadian Report for 1928

The report of C. B. Gooderham, dominion apiarist for Canada, has just come to press. It is interesting. A new title included is "Bees and Pollination," which reports the experiment of the Bee Division, in cooperation with the Horticultural Division, to determine the value of honeybees as cross pollinators of black currants. The varieties used, Madnus and Kerry, were found self-fertile, and this self-fertility was sufficient for about one-quarter to one-third a normal crop. Bushes exposed to the visit of all kinds of insect pollinators set to the heaviest fruit. Those tented with bees alone did not do so well.

In conducting a comparison of the Carniolan and Italian bees, the station has found that the crops produced by the Italians for a five-year period are greater than from the Carniolan, the average crop from the Italians being 116 pounds and that for the Carniolans 58 pounds.

An experiment conducted to determine the value of two-pound packages in increasing the productivity of weak over-winter colonies showed that the colonies assisted produced slightly more than double what the unassisted colonies gave. This year the difference 25½ pounds, was not enough to pay for the packages, but it must be remembered that the season was a very poor one.

The report covers other interesting experiments and is entirely worth studying.

Proposed Long Time Gas Treatment

Here is a suggestion for treating combs with formalin gas which I am trying out. I allow the healthy brood in the diseased combs to hatch out over queenless diseased colonies first. A hive body is made air-tight and a dish sufficiently large to hold the formalin mixture is placed in it. On top of this I tier up the bodies and frames, place on the cover and make the whole pile air-tight with strips of cloth dipped in warm paraffine. A small funnel that fits in a side tube conducts the solution through the bottom hive body into the container on the inside. A cork keeps the tube air-tight when not in use.

The treatment should be done in a warm room or house where it will not be necessary to disturb the combs for six months of warm weather. I have some that were treated this way beginning last spring, and I will not open them until a short time before I need them the present year.

I do not extract the honey, as I think there will have been sufficient time to destroy all germs. It may prove necessary to extract the honey, however. Also it may be necessary to put the combs in water and extract the water to free them from gas before using them. I believe ammonia has also been recommended to put in the water to neutralize the formalin.

While I am not able to say for sure that this will all be successful, I believe it will be, and will take less formalin when the treatment is extended for six months or longer. If anyone else tries this as an experiment, let them report results.

D. E. Lhommedieu, Iowa.

ACHORD QUEENS

Select Young Three - Banded Italian Laying Queens. Bred for Service.

50c each. Any Number

Prompt shipment. Safe arrival and satisfaction guaranteed.

W. D. ACHORD

FITZPATRICK, ALA.

Get Running's Queens

And Get Honey—They Satisfy

The kind WE use in our extensive Michigan Apiaries, where we produce honey by the carload.

Choice untested Italian Queens, 75c each; $8.40 per dozen.

Tested, 50c each extra

Write for prices in large quantities.

All queens sent from Sumterville, Ala. Address for quick service,

DAVID RUNNING

SUMTERVILLE, ALABAMA

New HOTEL PÈRE MARQUETTE
400 Rooms 400 Baths
1 person, $3 to $5—2 persons, $5 to $8
Large sample rooms, $4.50 to $7.00
H. Edgar Gregory, Mgr.
Peoria Illinois

Queen Prices for Balance of Season

The best of Italian queens when you want them or your money back by return mail, at the following prices:

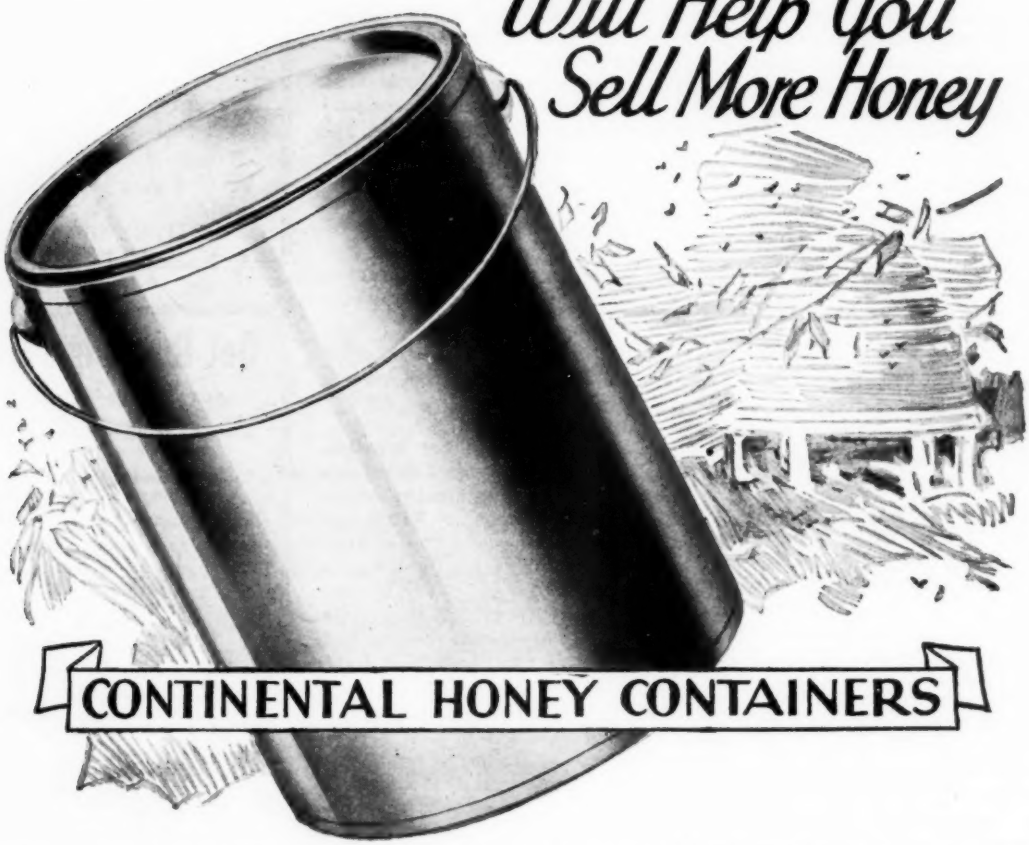
Untested, 1 or 100—50c each
Tested—$1.00 each

For larger quantities, write us for prices.

Cotton Belt Apiaries

Paris, Texas, R. R. No. 2

Clean, Bright, Tight Cans Will Help You Sell More Honey



Continental Honey Containers make a strong appeal to your customers and assure the Honey reaching them in excellent condition. And in this competitive age their economy is most important to you. Every can is carefully tested to insure against leaks.

Made in several styles and sizes to better meet your needs. Complete information, prices, terms or samples may be secured through any of the distributors listed below, or from any of our offices. Be sure you buy Continental Quality.

These Distributors Are Ready to Serve You:

The Brock Store
Decatur, Ind.

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Grand Rapids, Mich.

The Carl F. Buck Co.
Walla Walla, Wash.

Mountain States Honey Prod. Ass'n.
Boise, Idaho

The A. L. Boyden Company
Los Angeles, Cal.

The A. L. Boyden Company of Seattle
Seattle, Washington

Lone Star Bee Supply Co.
San Antonio, Tex.

Superior Honey Co.
Los Angeles, Calif.
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Dadant & Sons
Hamilton, Ill.

G. B. Lewis Co.
Watertown, Wis.
Albany, N. Y.
Sioux City, Ia.
Lynchburg, Va.
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J. W. Reid
Uvalde, Tex.

Burrows Hdwe. Co.
Beeville, Tex.

Standard Lumber Co.
Winona, Minn.

Magill & Co.
Fargo, N. Dak.

Sioux Honey Ass'n
Sioux City, Ia.

North Dakota Bee Supply Co.
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DETROIT JERSEY CITY LOS ANGELES ST. LOUIS CINCINNATI

"It's Better Packed in Tin"

Crop and Market Report

Compiled by M. G. Dadant

For our September report, we asked correspondents the following questions:

1. How is the total crop compared to 1928?
2. How much crop yet in prospect?
3. How is honey selling?
4. Do you anticipate any difficulty in moving 1929 crop at prices at least equal to 1928?

CROP SO FAR

Each season has its particular distinctiveness, and this time apparently it is that in the midst of good producing areas we find arid spots and in the midst of arid areas some good producing spots. We believe that this condition will depict the 1929 season as particularly different from others. As a general rule, we might say the white clover regions have had a good crop and that the southern areas and the western Pacific slopes have had a light crop, with perhaps less than an average in the intermountain territory.

The following states report about the same size crop as last year: Georgia, Pennsylvania, North Dakota, South Dakota, British Columbia. However, South Dakota reports above average in the eastern half, whereas the Black Hills are running short on account of the drought. In North Dakota there has been very little rain during the entire year, but this has been made up partly by good condition of bees and favorable days for bees to gather nectar.

The following states report above an average crop this year: New England 150 per cent, New York 125 per cent, Kentucky 200 per cent, Texas 110 per cent; Ohio, Indiana, Illinois, Iowa, Missouri, Michigan and Wisconsin each 150 per cent; Minnesota 115 per cent, Oklahoma 140 per cent, New Mexico 140 per cent, and Washington 110 per cent. Of these, perhaps Kentucky and New Mexico should be particularly mentioned because there was an exceedingly short crop last year and the crop this year is nothing phenomenal, although above what it was in 1928.

In New York the heavy crop has been in the northern half of the state, with only a moderate crop or less in the southern section.

Ontario, Quebec, and Alberta are all reporting very favorable crops this year, perhaps 150 per cent of last year.

We now come to the list of states which are reporting much less honey crop than last year, and they are as follows: New Jersey 75 per cent, Maryland 90 per cent, Carolinas 60 per cent, Florida 75 per cent, Mississippi 75 per cent, Alabama 75 per cent, Louisiana 50 per cent, Nebraska 70 per cent, Kansas 90 per cent, Arizona 60 per cent, Colorado 80 per cent, Montana 70 per cent, Idaho 60 per cent, Wyoming 90 per cent, Nevada 70 per cent, Utah 80 per cent, Oregon 70 per cent, and California 60 per cent. In the same category are Manitoba and Saskatchewan, both reporting about 70 per cent of last year's crop. In New Jersey it has been dry. Colorado has fine reports from the San Luis and Arkansas valleys, but made up by a shortness on the western slope. Montana has been too dry, and so has Idaho. In Wyoming it is dry, but the total crop may perhaps reach last year. Nevada and Utah have had their drought, but recent rains may help somewhat. California has been struck by several short crops in succession, and this one seems to be the worst of all. Some of the best beekeepers out there are reporting difficulty in keeping up to their spring count number of colonies and believe that there are less bees in California than there has been for a long time.

This, in a measure, gives an idea of how the crops run in different sections of the country. The long crop in the heavier producing areas is going to have to make up for the shortage in the South and in the intermountain territory as well as on the coast. All in all, we do not believe the crop this year will be 100 per cent of 1928, and we are very sure that the crops seeking central markets will be less. In other words, the heavy crop is in sections where much of the honey is distributed locally and will not have to reach the central markets.

CROP TO COME

Only a few sections are reporting anything like favorable conditions for the coming few weeks. The central western area, which was plenty wet during the early season, has turned off dry now, and unless some rains fall quickly the fall crop is going to be a failure. Some few sections look fairly good, but, all in all, there is undoubtedly not going to be much more fall honey produced this year than there was a year ago. The cotton crop in Texas has been affected somewhat by drought, although there is hopes that recent rains will make a normal crop there.

PRICES COMPARED TO 1928

The Southeast is complaining of lower prices on honey now compared to a year ago. The Carolinas and Virginia are not looking with any difficulty upon being able to sell their crop readily, and this holds true of other southern states which have had a short crop.

In the north half of the country there does not seem to be any tendency towards sinking prices for honey except that buyers have been circulating New York with offers one cent below last year's prices on account of the fact that the crop is so much better than it was.

We are advised that one of the largest producers in Michigan has been offered 8 cents per pound for his fine white extracted honey and has refused the same, thinking it would be worth a little better than last year.

We also learn that buyers are offering in the plains territory, especially in the Dakotas, a price equal to last year on white extracted honey in carload lots. In contradiction to this, one of the large cooperatives in the West is expecting to start its offers to sell at 8 cents per pound for honey this year, which is from ½ to 1 cent per pound higher than a year ago.

It would appear from the surface that it should be possible to obtain a slightly higher price than last year, especially in view of the short crop in the Missouri Valley and in the intermountain areas. There will not be as much honey harvested, undoubtedly, as there was in 1928, and a very much less carryover.

We would urge a "safe and sane" policy on the part of honey sellers. On the one hand, the enthusiast who looks for a big chance to sell honey this year should not boost prices to the point where subsitutes will be sought, and on the other hand the localities of heavy production should most certainly hold off and feed the honey to the markets as it is demanded.

Apparently, the European markets are not demanding an excess of last year, and perhaps will not be wililng to pay much higher prices than ruled in 1928.

In Canada, Ontario and Quebec are getting a very nice crop, but this is largely offset by short crops in some of the prairie provinces, and undoubtedly there is not going to be any difficulty again this year in disposing of Canadian honey at satisfactory prices.

All in all, we see no reason at all why honey prices should drop over last year in any sections of the country, and it does appear possible that there may be a stiffening in jobbing prices over 1928.

HOW IS HONEY SELLING?

We believe that reporters generally would indicate that honey is selling much more readily now than it did a year ago at this time. This holds true for most sections of the country, but does not hold true for many of the southern areas, especially the Southeast, including Georgia and Florida. There is a short fruit crop this year, which should enhance the possibility of honey selling, and the fact that there is scarcely any carryover anywhere should undoubtedly make for a demand on the part of jobbers and distributors of honey, as well as on the part of a number of consumers who have not been able to get their usual stock from ordinary sources of supply.

Most reporters are enthusiastic over the possibilities of sale of honey this year and are looking forward toward moving their entire crop without difficulty.

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—where you may buy, sell or exchange at moderate cost — only 7 cents a word. Count each word of your message, including name and address. Our advertisers tell us: "IT PAYS." Send your ad for the very next issue now to reach us by the 15th. Terms: Send remittance with copy and order. Minimum ad ten words.

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Ads as small as ten words, costing only 70c, are accepted here, but our regular advertisers have demonstrated that it pays to tell more. Use enough words to thoroughly describe your offering and you'll sell quicker. Address all orders or inquiries to the Classified Advertising Department of the American Bee Journal, Hamilton, Illinois.

Will sell your Honey, Flowers, Poultry, Fruit, Pets (as rabbits, etc.) and more . . . . Is your ad here?

As a measure of precaution to our readers, we require references of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisements of used beekeeping equipment or of bees on combs must be accompanied by a certificate of inspection from an authorized inspector.

Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department, it should be so stated when advertisement is sent.

BEES AND QUEENS

FOR SALE—Queenbees, 50 cents each as long as they last. Graydon Bros., Greenville, Ala., R. No. 4.

EXCELLENT untested queens during September, 50c each for any number. Pure stock three-band, carefully grown. D. W. Howell, Shellman, Georgia.

CLOSING OUT for the season. While they last, we are offering our high grade queens in any quantity for 50c each. J. M. Cutts & Sons, R. 1, Montgomery, Ala.

GOLDEN ITALIAN QUEENS—Producing large, beautiful bees, solid yellow to tip. Queens, untested, $1.25; select untested, $1.50; select tested, $3.00 each. Ask for circular for package bees.
Dr. White Bee Co., Sandia, Texas.

IF YOU want bees that are gentle to handle, good honey gatherers and beautiful to look at, my strain of golden Italians will please you. Prices—Untested, 90c; six, $4.80; twelve to forty-nine, 70c each; fifty or more, 65c each. Tested, $1.25 each. Health certificate, safe arrival and satisfaction
Hazel V. Bonkemeyer,
R. 2, Randleman, N. C.

REACROFT selected Italian queens: One 90c; ten $8.50. Quantity prices on application. Satisfaction guaranteed. George H. Ren, Reynoldsville, Pa.

CHOICE, bright Italian queens that are a pleasure to work with and you will be proud to own. Requeen with stock that has been bred and selected in the North the past 26 years for good wintering, hustlers, gentle and fine color. One queen, $1.00; dozen, $10.00. Breeders, $10.00. Emil W. Gutekunst, Colden, N. Y.

PETERMAN'S select Italian queens, also package bees. Queens: 1, $1.00; 6, $5.50; 12, $10.00; 25, $20.00; 50 or 100, 75c each. H. Peterman, Lathrop, Calif.

SIMMONS ITALIAN QUEENS—One, 90c; six, $4.75; twelve, $9.00. Long distance orders by airmail. Fairmount Apiary,
Livingston, N. Y.

"SHE-SUITS-ME" Italian queens. One 80c; six, $4.00. Send for circular. See advertisement in January issue. Allen Latham, Norwichtown, Conn.

SAME OLD PACKAGE—Two pounds Italian bees, two combs (Hoffman frames), young Italian queen laying, to you. Same old price—six dollars per single package. Same old terms—one-fifth down to book order. May delivery, f. o. b. Same old Jes Dalton, St. Francisville, La.

GOLDEN Italian Queens—Bees very gentle and cap up honey white. State inspected. Satisfaction guaranteed. Select tested, $2.25; tested, $1.25; untested, 90c each; 6, $4.80; 12 or more, 70c each.
D. T. Gaster, R. No. 2, Randleman, N. C.

SUNNYLAND BEES ALWAYS PLEASE. Inquiries solicited. Crenshaw County Apiaries, Rutledge, Ala.

GOLDEN ITALIAN QUEENS, untested, 90c; 6, $4.75; 12 for $8.25. Tested, $1.25; select tested, $2.25. State inspected. Satisfaction guaranteed. Sam Hinshaw & Son,
Randleman, N. C.

GOLDEN Italian queens, untested, $1.00 each; twelve, $9.00; six, $5.00. Breeders, $5.00 to $10.00. Tested, $2.50 each. Thirty years' a golden breeder, and they stand second to none. J. B. Brockwell, Barnetts, Va.

QUEENS AND BEES—Italians, golden and Carniolans. Tested, $1.00; untested, 75c each. Bees, $1.00 per pound. Satisfaction guaranteed. C. B. Bankston, Box 65, Buffalo, Texas.

LEATHER COLORED ITALIAN QUEENS—$2.00; after June 1, $1.00. Tested, $2.00.
A. W. Yates,
15 Chapman St. Hartford, Conn.

HIGHEST grade Italian queens—Tested, $1.50; untested, 75 cents. Package bees, one pound, $1.50; two pounds, $2.50; three pounds, $3.25. Have had no disease. State inspection certificate with each shipment. Safe delivery guaranteed.
T. L. Davis, Buffalo, Leon Co., Texas.

THRIFTY Caucasian queens from daughters of imported mothers. After April 15: One, $1.50; twelve, $14.00. Safe arrival. Tillery Bros., Greenville, Ala., R. 6. U. S. A.

FOR SALE

IF you understand beekeeping, will sell at 50c to 60c on the dollar. Have best outfit on two counts in Iowa. Three extractings over 35,000 pounds. Delbert E. Lhommedieu, Colo, Iowa.

TWO 60-pound cans honey, $12.00. Sample 10c. Also 200 pure Hollywood Leghorn pullets. Harve Schoonover, Camp Point, Ill.

FOR SALE—22 colonies of Italian bees. Young queens, standard ten-frame, well painted hives, ample equipment, good combs. Guaranteed disease free. Completion of college makes sale necessary. Also smart English Shepherd pups. Write for details. Amos G. Horney, Sheridan, Ind.

FOR SALE—600 colonies bees with extracting equipment, fully equipped; located in the heart of the sweet clover belt of North Dakota; with crop or without. No disease. Reason for selling, other interests. Write F. S., care Bee Journal.

FOR SALE—350 colonies of Italian and Caucasian bees, free from disease, and equipment for extracted and chunk honey, all in good standard eight-frame hives. Located in the alfalfa district of the Platte Valley, Wyoming. Mrs. Harvey Whitacre, Saratoga, Wyo.

FOR SALE—300 colonies of bees, located in the heart of the Pecos Valley of New Mexico. Fully equipped, central extracting plant. Guaranteed no disease. For full description, address Will Benson, Artesia, N. M.

APIARY FOR SALE—On account of the fact that my law practice now demands so much of my time, I am offering for sale my entire apiary, consisting of something over seven hundred colonies of bees in ten-frame hives located in sixteen yards, together with all accessories. Good location in south Georgia, near the Florida line, and have no other commercial beekeeper in my territory. Will not sell on credit, but anyone with cash can get a bargain. N. L. Stapleton, Colquitt, Ga.

HONEY AND BEESWAX

WANTED—Strictly graded white clover comb honey, 4¼-⅞, wood glass front cases. State quantity and lowest price delivered Chicago. Also extracted. A. L. Haenseroth, 4161 Lincoln Ave., Chicago, Ill.

NEW HONEY—White clover, in 60-pound cans, 10c; No. 1 comb, 4¼ sections, per case, $4.50. F. J. Smith, Castalia, Ohio.

CLOVER HONEY—Comb, extracted and chunk. Dr. E. Kohn & Son, Grover Hill, Ohio.

WHITE CLOVER comb honey. Charles Guhl, R. 7, Napoleon, Ohio.

WANTED—Light honey, also comb. Mail sample and price. Cottrell Craig Pl., Lombard, Ill.

FINEST quality honey for sale. Write for sample. W. G. Duckwall, Jacksonville, Ill.

WANTED—Several cars white extracted honey. Old Taylor Honey Co., Chandler, Okla.

FOR YOUR APPROVAL—White clover, heartsease and goldenrod honey. Five-pound pail one dollar, postpaid. Quantity rates. Ambraw Apiary, Landes, Ill.

FOR SALE—Sixty thousand pounds bulk comb honey in frames or any style container. Write for prices and quantity you can use. Hyde Bros., New Canton, Ill.

WANTED—A car or less quantity of white honey in 60-lb. cans. Mail sample and quote lowest cash price for same. J. S. Bulkley, 816 Hazel St., Birmingham, Mich.

WANTED—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5 cents a pound for wax rendering. Fred W. Muth Company, 204 Walnut St., Cincinnati, Ohio.

COMB WANTED—White clover, also buckwheat, in glass front cases, must be cellophane wrapped. Quote lowest prices various grades when ready.
Arthur H. Hoffman, Inc.,
Richmond Hill, N. Y.

FOR SALE—White clover comb honey. Prices on request. C. Holm, Genoa, Ill.

HONEY WANTED—Small or large lots, white or extra light amber grades, in 60-lb. cans. Send samples, state quantity and lowest N. Y. delivered prices. Also can use white comb if state section size, and style packing cases, with delivered price.
Arthur H. Hoffman, Inc.,
Richmond Hill, N. Y.

HONEY FOR SALE—Any kind, any quantity. The John G. Paton Co.,
217 Broadway, New York.

HONEY FOR SALE—All grades, any quantity. H. & S. Honey and Wax Company, Inc., 265 Greenwich St., New York City.

WINKLER'S white clover honey. Write for prices. Sample 20c. Winkler Honey Co., Joliet, Ill .

FOR SALE—Clover honey in 60-pound cans at 10c per pound, f. o. b. Polo. G. L. Sauer, Polo, Ill.

WANTED—Car lots of honey. State quantity, shipping point and price. Mail sample. Hamilton, Wallace & Bryant, Los Angeles, Calif.

FOR SALE—Extracted clover honey by pound, ton or car. Sample 15c. Victor Apiaries, Chaffee, N. D.

FOR SALE—Finest quality light amber white clover honey, in new 60-pound cans, $10.50 a case. Large sample 20c. Martin Carsmoe, Ruthven, Iowa.

FOR SALE—No. 1 clover honey, packed six cases to the carrier, at $4.50 per case; No. 2 clover comb, $3.50. Buckwheat and goldenrod at $1.00 per case less. Prompt service and a square deal. Charles B. Hatton, Andover, R. 3, Ohio.

BEST white clover honey, five-pound pails, $9.00 per dozen; in 60-pound tins, 12c. Clover comb chunk honey, case of six five-pound pails, $5.00. F. L. Barber, Lowville, N. Y.

EXTRA heavy body, water-white sweet clover honey, any quantity in pails or 60's. Sample 10c. C. S. Engle, 1610 Fourth Ave., South, Fargo, N. D.

FOR SALE—White clover honey in 60-pound cans. None finer. Satisfaction guaranteed. J. F. Moore, Tiffin, Ohio.

WHITE CLOVER and amber extracted, any quantity, in any package. Prices and sample free. Henry Stewart, Prophetstown, Ill.

FOR SALE—Finest white clover comb honey, fancy and No. 1, in glass-front cases. Write for prices. N. B. Querin & Son, R. 6, Bellevue, Ohio.

FOR SALE—Finest white clover honey, in 60-pound cans, 10c pound; chunk honey, $9.00 per dozen five-pound pails. Joseph H. Hoehn, Ottoville, Ohio.

FOR SALE—One carload of approximately 40,000 pounds sweet clover honey in new 60-pound cans. Can deliver October 1. Ref., Bank of Toronto. M. W. Thompson, Toronto, S. D.

FOR SALE—No. 1 clover comb honey, $4.50 per case; No. 1 dark, $3.00 per case, 24 section cases, six cases to carrier. Clover extracted, 10c; dark, 7c, two 60-pound cans to case. H. G. Quirin, Bellevue, Ohio.

WHITE CLOVER comb honey, packed eight cases to carrier. W. L. Ritter, Genoa, Ill., DeKalb County.

BLACK HILLS fancy light extracted honey from sweet clover and alfalfa, in large and small quantities. Ernest W. Fox., Fruitdale, S. D.

15,000 POUNDS of delicious white clover honey, $12.50 per case of 120 pounds, freight paid to your station within 500 miles of Savanna. Write for large lot price. Valley View Apiaries, Savanna, Ill.

WHITE COMB sweet clover honey, case 24 sections, $3.85. Marsalek Apiaries, Cadams, Neb.

EXCELLENT quality, straight white clover honey, extracted and chunk comb, any pack, priced right. Ohmert Honey Company, Dubuque, Iowa.

HONEY (comb and extracted), pure maple syrup, maple sugar and sorghum molasses. Special price to quantity buyers. C. J. Morrison, 1235 Lincoln Way West, South Bend, Ind.

HONEY FOR EVERY PURPOSE—We have it in any amount; light amber and white clover, basswood, sweet clover, buckwheat. Write us what you need and ask for prices. A. I. Root Company of Chicago, 224-230 West Huron Street, Chicago, Illinois.

FOR SALE—Our own crop white clover and amber fall honey in barrels and cans. State quantity wanted and we will quote prices. Samples on request.
Dadant & Sons, Hamilton, Illinois.

STURDEVANT'S CLOVER HONEY — St. Paul, Neb. Any quantity.

NEW CROP shallow frame comb honey, also section honey; nice white stock, securely packed, available for shipment now. Colorado Honey Prod. Ass'n, Denver, Colo.

HONEY FOR SALE — White and amber honey in 60-lb., 10-lb. and 5-lb. tins. Write for prices.
Dadant & Sons, Hamilton, Illinois.

SHALLOW frame white comb honey and white extracted honey.
The Colorado Honey Prod. Ass'n,
Denver, Colo.

FOR SALE—Northern white, extracted and comb honey.
M. W. Cousineau, Moorhead, Minn.

WANTED—White clover honey in shallow extracting frames. Give us your best delivered price. M. V. Facey, Honey Co., Preston, Minn.

WE are carload cash buyers of fancy white honey for packing our quality Lake Shore brand and amber honey for bakery trade. Write us. W. F. Straub Laboratories, Inc., 5514-24 Northwest Highway, Chicago.

WANTED—Kansas extracted honey. J. A. Hon, Piedmont, Kans.

HONEY WANTED—State quality, quantity and price. D. Steengrafe, 116 Broad St., New York.

BUCKWHEAT EXTRACTED WANTED—Can use quantities if packed in 36-pound cans and 160-pound kegs, and must be genuine dark buckwheat, crystallized preferred. Send sample, state what packing and lowest delivered New York City prices. Arthur H. Hoffman, Inc., Richmond Hill, N. Y.

MICHIGAN HONEY—New crop of extra fine quality clover extracted honey. Howard Potter, Jr., Ithaca, Mich.

CLOVER HONEY FOR SALE—A. G. Kuersten, Burlington, Iowa.

NEW CROP extracted clover honey, in new cans and cases, for sale in case or ton lots. Satisfaction guaranteed. Sample 20c. Prices on request. Harry C. Kirk, Armstrong, Iowa.

NEW CROP white clover extracted and chunk comb honey. Write for sample and prices. Kalona Honey Co., Kalona, Iowa.

NEW CROP fancy clover honey, comb and extracted; finest quality. Write Irvin A. Stoller, Latty, Ohio.

WANTED

WANTED—We have allowed our supply of copies of American Bee Journal for May, 1929, to run clear out, owing to heavy subscription calls. We need a number of copies to supply full sets to libraries, etc., from time to time, and will therefore pay 10 cents each for copies of May number which are returned by subscribers, or mark up their subscriptions two months. American Bee Journal, Hamilton, Ill.

SUPPLIES

MAKE queen introduction sure. One Safin cage by mail, 25c; five for $1.00 Allen Latham, Norwichtown, Conn.

FOR SALE — Two-frame reversible honey extractor, 12x16 pockets. Used one season to extract honey from five colonies of bees. Price $22. Edwin Collins, Emporia, Kans.

100 USED eight-frame comb honey supers, complete. Size 3⅝x5x1½; plain; 50c each. Ohmert Honey Company, Dubuque, Iowa.

SAGGED COMBS are result of slackened wires caused by wires cutting soft wood of frames. Use metal eyelets. Per 1,000, 60c. Handy tool for inserting eyelets, 25c. Postage 3c per 1,000.
Superior Honey Co., Ogden, Utah.

LEWIS BEEWARE and Dadant's Foundation at catalog prices, f. o. b. Walthill, Neb. William Stanley Fritts, Walthill, Neb.

"BEEWARE" and Dadant's Wired Foundation for the Northwest. Catalog prices. F. O. B. Fromberg, Montana. Beeswax wanted. Write for prices.
B. F. Smith, Jr., Fromberg, Mont.

FOR SALE—Foundation, bee brushes, comb honey cartons, feeders, nailed and painted bodies, bottoms, covers, and bodies, veils, sections, a big assortment of frames, excluders, comb and extracting supers k. d., and many other items in good, usable condition. Reason for selling, items no longer listed in our catalog. Prices the lowest anywhere for the value. You can address G. B. Lewis Company, at Watertown, Wis., Albany, N. Y., Lynchburg, Va., Texarkana, Ark., or Sioux City, Iowa.

BEST QUALITY bee supplies, attractive prices, prompt shipment. Illustrated catalog on request. We buy beeswax at all times and remit promptly.
The Colorado Honey Producers' Ass'n,
Denver, Colo.

FOR SALE—We are constantly accumulating bee supplies, slightly shopworn; odd sized, surpluses, etc., which we desire to dispose of and on which we can quote you bargain prices. Write for complete list of our bargain material. We can save you money on items you may desire from it.
Dadant & Sons, Hamilton, Illinois.

HAVE YOU any Bee Journals or bee books published previous to 1900 you wish to dispose of? If so send us a list.
American Bee Journal, Hamilton, Ill.

THE DADANT SYSTEM IN ITALIAN—The "Dadant System of Beekeeping" is now published in Italian, 'Il Systema d'Apicoltura Dadant." Send orders to the American Bee Journal. Price $1.00.

BEE HUNTERS—Use my Beescent and instructions. One man did and found three bee trees in one afternoon. Will Grover, Bristol, Vt.

RABBITS

PEDIGREED Chinchilla bucks, age four months. Gold Certificate, heavyweights, $4.00; Standards, $3.00; Silver Certificates, $1.50. M. Patchett, Fairwater, Wis.

IF you are looking for A No. 1 stock Chinchillas, standard and heavyweight, black silver fox fur rabbits, write for prices. Lieske's Rabbitry, Box 155, Fairwater, Wis.

MISCELLANEOUS

SOILED cane granulated sugar for feeding. Winkler Honey Co., Joliet, Ill.

DIRECT MAIL ADVERTISING — Tell us your problems. Moderate rates. Advertising Service Bureau, 724½ Bank, Keokuk, Iowa.

SELL IT—Honey or bees or queens or second-hand equipment or pet stock or poultry, by advertising it in Gleanings in Bee Culture, Medina, Ohio, with its more than 20,000 paid subscribers. Rates: 7c a word classified; $4.20 an inch for display advertising. That great beekeeper, George S. Demuth, is editor, for whose beekeeping teachings 20,000 beekeepers subscribe.

No. 15—2-frame ball bearing, reversable, extractor with coasting crank and brake	$23.85
No. 5—2-frame extractor	$11.25
No. 1—Uncapping baskets, per pair	$ 3.50
24 8-ounce honey glasses, screw top	$ .85
24 16-ounce honey glasses	$ 1.15

Write for catalogue and bargains in supplies.

F. J. RETTIG & SONS, Wabash, Ind.

ITALIAN QUEENS
THREE-BANDED

50c For the remainder of the season 50c ea., one or one hundred. Safe arrival. No disease and satisfaction guaranteed.

THE CROWVILLE APIARIES
J. J. Scott, Prop., Winnsboro, La., R. 1

Queens 40c Each

High grade Italians, too. Bred by long-experienced breeder from best select stock. Every queen guaranteed to please.

G. H. MERRILL APIARIES
GREENVILLE, S. C.

American Honey Institute

(Continued from page 437)

Honey Helpings—Clip Sheet of American Honey Institute

It is interesting to note that some of the very recent copy of the Sugar Institute is identical with that provided several years ago by the honey interests and as well used by American Honey Institute in past numbers of its clip sheets. For instance, we have always said that honey intensifies fruit flavors, brings out or accentuates the fresh flavor so much desired in cooked vegetables and improves the flavor of cakes if the cake is allowed to age. A recent clip sheet from the Recipe Service which appears under the syndicated copy of Betty Barclay, and which was prepared for the Sugar Institute, uses the identical phrasing — "intensifies fruit flavors and accentuates the much desired fresh flavor of vegetables."

A copy of our honey preserving clip sheet (No. 3) was mailed two weeks ago to the nutrition workers, both teachers and writers. Here is a copy for your files. You may be interested to know that this recipe service is given to the following groups, and if you have anyone you wish placed on our mailing list please send us their names:

Household Page Writers — newspapers and magazines.

Radio Stations—directors of household chat hours. (Two household directors have broadcasted honey combinations this month and have received requests for additional copies of the clip sheet. They sent the requests to the Institute office and it in turn sent the individuals the material asked for. These stations were located in Arizona, Michigan and Ohio.) The radio work is fast getting under way and we now have almost a hundred stations on our mailing list.

Home Economic School Teachers—As time permits, special honey stories for the grade children will be prepared, as well as laboratory demonstration outlines. Teachers are very anxious for such material and will use it if we can get it to them.

Printed Honey Booklet Needed

So many requests are coming in now that we realize more than ever the necessity for a small printed honey booklet. Our experience at the Home Economics Convention brought out the absolute need for more printed matter on honey. Teachers were constantly asking for twenty-five copies of this, thirty copies of that, sixty copies of another type, all for distribution to their classes.

A honey booklet is very much a necessity for carrying on this work. A dummy for such a piece of printed matter is now being prepared, and if you are interested, please let us know how many you could use. One bottler intimated he could use 50,000 copies, another organization the same number, and still another one 5,000.

The context of the book will be on honey, of course, and recipes for its use. The cover page may carry the bottler's own design or trademark, but the inside cover page will state that this material is prepared by the Educational Department of the American Honey Institute.

Advertising Agencies Request Institute Material

An advertising agency in Detroit writes: "We should be very glad at any time to have your Miss Fischer contribute any material which she might term suitable for our magazine. We assure you this will be given our very close attention and will find a place in the publication."

Rest, State Fairs and Honey

(Continued from page 437)

tablespoon salt. Mix well, then add one pint of white flour and enough Graham or whole wheat flour to make medium dough (about three pints.) Mix well and knead fifteen to twenty minutes. Let rise until it doubles in size, knead down, let rise again, mold into loaves, buttering tops as directed in former recipe, let rise to double bulk, and bake in moderate oven.

Honey Cinnamon Buns. Scald two cups milk, add one-half cup honey and two teaspoons salt; cool and when lukewarm add one compressed yeast cake dissolved in one-fourth cup water. Add slowly, beating well, four and two-thirds cups whole wheat flour and one teaspoon cinnamon. Let rise to twice its bulk, beat well, turn into greased baking tins, having pans half full, let rise one-third in bulk, sprinkle tops well with cinnamon, bake, and when done moisten tops with a little water sweetened with honey.

Honey Rusks. Scald two cups of milk and cool, adding one cake of dry yeast, one cup flour and one-half cup honey. Let stand in warm place over night. In morning, beat together four tablespoons melted butter and two eggs, add to over-night batter. Add two teaspoons salt and one teaspoon cinnamon (if desired). Then add sufficient white flour to make soft dough. Knead slightly, then mold dough with hands into balls about the size of a duck egg. Set close together in buttered pan and let rise until twice their bulk. Brush with beaten white of egg and bake thirty minutes. Remove from oven and moisten tops with water sweetened with honey and a dash of cinnamon, if desired. Nuts or raisins may be added to this when making up the dough, but are not necessary to their fine flavor.

Marketing Problems Now and Ten Years Ago

By J. F. Diemer

Nowadays marketing honey is a real problem; ten years ago it was not. Ten years ago a 60-pound can sold for $18.00, a 10-pound pail for $3.50, a 5-pound pail for $2.00. Money was cheap and plentiful. Nearly everyone bought honey. Money in the hands of consumers creates a demand. Demand and supply work hand in hand in factory-made goods. The factory only makes enough to supply the demand. Prices are set to cover the cost of material, labor and the selling cost. Agricultural products, of which honey is one, cannot be controlled the same way, because the supply cannot be regulated to suit the demand. Honey, like other farm products, is worth only what it will sell for. If a large crop is produced, under present conditions it naturally sells for less per pound than a small crop would. The same rule applies to all farm products. Cooperation in marketing may be worked out in the future, but when it is, you will find the producer in his place, producing, and the salesmen in their place, selling. Bee farmers and others engaged in agriculture have no trade secrets. We tell everybody all we know, and then some. Agricultural colleges as well as we beekeepers are continually teaching others how to make a success of beekeeping. It will probably

always be done. In this county, ten years ago there were only five commercial honey producers. Now there are twenty, besides a lot more of the smaller variety that are growing up in the business. Water seeks its level; finance controls a man's spending. Ten years ago farmers went home smoking 15-cent cigars; today, after getting the habit, they are smoking cheroots at three for a dime, and eating honey at 15 cents per pound instead of the 35-cent honey during the war. Honey is a product of the soil, the same as you and I. Missouri soil produces people, corn, potatoes and many other things, including honey. Some day, perhaps, we will all dump our honey in a big tank, stir it up, and let salesmen do the selling; that may be the cooperation we are all looking for.

(The reason for such high prices ten years ago was the shortage of sugar in Europe. It was the same for most produce of the farm, pork, for instance, being about three times as high as the normal values. This is one of the main causes of the impoverishing of Europe and enriching of America. From a debtor country the United States became a creditor country, and will probably remain so. But it is doubtful that we will ever again see such high prices ruling.—Editor.)

Using Foundation and Combs in Shaking Diseased Colonies

Colonies of bees with bad cases of American foulbrood I have always been able to cure by shaking them on full sheets of foundation. I do not want a heavy honeyflow, however, when I shake them. No honeyflow at all suits me best.

At the end of forty-eight hours I give each shaken colony two combs for brood and one for honey. I shake on seven frames of foundation and have shaken at least five hundred colonies.

I have shaken in December—not many, to be sure—but that is where I got onto the idea that I do not want any nectar coming in, for they are forced to consume every drop of honey that they have or that the hives might contain.

You understand that in shaking them from the combs some honey may be shaken out where a burr-comb may be broken off and torn. I do not shake them on paper or on the ground in front of the hive, but shake them into the new hive with an excluder on the front. I will bet four to one on this method for curing any case of American foulbrood.

W. A. Gridley, California.

JAY SMITH'S PUREBRED QUEENS

Highest Quality — Italian, Carniolan

at Reduced Price

$1.00 EACH FOR REMAINDER OF SEASON

BREEDING QUEENS, service for 1929-30 . . . . . $10.00 each

ROUTE THREE **JAY SMITH** VINCENNES, INDIANA

HONEY CONTAINERS

2½-lb. cans, 24 in a case, per can	$1.15
2½-lb. cans, per carton of 100	4.00
5-lb. pails, per case of 12	1.10
5-lb. pails, per carton of 50	3.25
5-lb. pails, per carton of 100	6.25
10-lb. pails, per case of 6	.90
10-lb. pails, per carton of 50	4.60
10-lb. pails, per 100	9.00
5-gal. square cans, one in a case	.75
5-gal. square cans, two in a case, per case	1.10

GLASS JARS

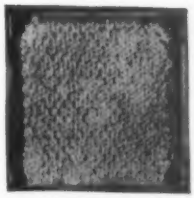
½-lb., 24 in a reshipping case, per case	$ .90
1-lb., 24 in a reshipping case, per case	1.20
2-lb., 12 in a reshipping case, per case	.85

Offered for shipment in original packages either from Reedsville, Wisconsin, or direct from factory

All orders shipped within 24 hours from the time they are received

A. H. RUSCH & SON CO.

REEDSVILLE, WISCONSIN

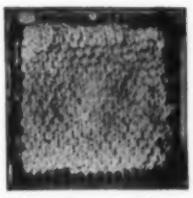


Fancy Section Honey

Dadant's Surplus Foundation

A STANDARD OF PERFECTION

This foundation gives each section a delicate center that blends perfectly with every bite. Remember, well pleased customers are the comb honey producer's biggest asset.



Choice or No. 1 Sections

Sold by all Lewis - Dadant Dealers

DADANT & SONS, Hamilton, Illinois

QUEENS --- YANCEY HUSTLERS

Beautiful Three-band Italians. Record Honey-makers

Untested, 75c each; $8.00 per dozen; $50.00 per hundred
Tested, $1.25 each; $12.00 per dozen

Only one grade shipped—Select. Every queen guaranteed to please you. Reduced prices on package bees

CANEY VALLEY APIARIES, Bay City, Texas

Yancey Bros., Owners

Berry's Reliable

QUEEN BEES

FOR IMMEDIATE SHIPMENT

50c Each — Any Number — 50c Each

Thirty-Fve Years of Selection from the Best Our Three Banded Italian Queens

After all these years of careful breeding, not always from a commercial standpoint, but as large honey producers, therefore breeding for our own use, we have a pure Three-Banded Strain of Italian bees unexcelled for gentleness, disease resistance and honey production. Our breeding queens are those selected from thousands of honey producing colonies, located in Nebraska, Wisconsin, Iowa and Manitoba, Canada. In this way we are able not only to test out our strain from a honey production standpoint, but from a climatic as well. You will find our queens hardy and therefore able to stand the hardest winters.

We sell only selected queens. The culls we kill. Safe arrival we guarantee and satisfaction on everything we ship. A certificate of health accompanies each shipment. We clip wings of queens on request without charge. Write for circular price list and prices on hundred lots of queens.

M. C. Berry & Co.

BOX 697 MONTGOMERY, ALA.

TEN QUEENS

FOR $6.00

Less than ten, 75c each

J. F. McVAY, Jackson, Ala.

FREE PREMIUMS
—FOR—
NEW SUBSCRIBERS
Send for a list of them
HELP US GROW
American Bee Journal
Hamilton, Illinois

BETTER BRED ITALIAN QUEENS 45c EACH

Nothing but the best shipped. No culls, old queens, no virgins. Send 40c for sample.

CALVERT APIARIES
A. L. Webb, Prop. Calvert, Alabama

PURE ITALIAN BEES

Untested queens.....$1.00
Tested queens..... 1.50

Will replace any queen that does not please you. Satisfaction given.

J. ALLEN, Catherine, Alabama

Russian Notes

By W. J. Nolan

BEEKEEPING is only one aspect in which direct similarities may be seen between Russia and the United States. For instance, Russia is the only country comparable to the United States in natural resources today. Suffice to say, in Russia the development of these has scarcely begun. The latter remark appears to apply also to commercial beekeeping in Russia, although it may seem somewhat of a paradox to say this when it is reported (Pchelovodnoe Delo, July, 1925) that the great Russian beemaster, P. E. Prokopovich, even some years before the introduction of the Italian bee into this country numbered his colonies as twelve thousand.

It will be recalled that Prokopovich, who was born in 1775 and died in 1850, was one of the early experimenters with movable frame hives (Langstroth and Dadant, The Hive and the Honeybee, 1927, page 112; Pchelovodnoe Delo, July, 1925). He also established in 1828 a beekeeping school with a two-year course. Among his pupils were illiterate peasants, and so the course of instruction in the winter included reading and writing as well as beekeeping. The practical work came in the summer. First-year students were given not less than twenty colonies to take care of, while second-year students might be given charge of one hundred colonies. The school itself lasted for fifty-one years (Kratkaya Encyclopedia Pchelovodstva, 1928), and in this time turned out about six hundred students. Moses Quinby was eighteen years old at the date of the founding of this school, and Charles Dadant but eleven.

A wide gap separates beekeeping as practiced by Prokopovich and that now practiced by commercial beekeepers in this country. Prokopovich founded his school about a quarter of a century before Langstroth announced his hive, about thirty years before Mehring told of his discovery of foundation, and about forty years in advance of Hruschka's extractor, to say nothing of other important advances in commercial methods. Whether or not Russia, down to the outbreak of the World War, had made fullest use of all these important discoveries and inventions, it is quite evident that in the past few years commercial beekeeping within the U. S. S. R. is entering upon a new era. As pointed out in a previous article, the fact that Russia is now making a vigorous attempt to utilize the world's market in disposing of its honey crop is concrete evidence of this.

The first shipment of honey inaugurating this new state of affairs (Pchelovodnoe Delo, July, 1928) reached London by boat from far eastern Siberia late in 1926. It had not been packed suitably for the long ocean shipment nor had it been properly graded. In view of the further fact that a price of 18½ cents per pound was asked, while the current price was only about half as much, it is not surprising that the honey did not sell. It was finally disposed of on the Hamburg market at a little more than 9 cents per pound. The experience with this honey (Pchelovodnoe Delo, January, 1928) awakened those in charge to the necessity of rigorous packing and grading regulations. It was accordingly proposed to assemble at Moscow all honey for export, where it could be uniformly regraded, blended when necessary, and repacked regardless of prior grading and packing by the organizations furnishing it. The new regulations provide for absolutely clean, aromatic honey, each lot to be from one source, thoroughly ripened, and unfermented. It is to be packed in tin cans, two in a wooden case, holding practically the same amount as the sixty-pound can commonly used here.

That excellent honey is produced in Russia is attested by the fact that Russian honey was awarded a grand prize (Pchelovodnoe Delo, January, 1928) at the International Food Show held in Paris in October, 1927. Among some of the best grades of Russian honey is that produced from basswood in the region around Vladivostok. The writer has had occasion to judge of the excellence of this honey first hand. It is interesting to note that basswood honey from this region formed nearly 25 per cent of the total of 2,073,000 pounds (Pch. Delo, November, 1928) of the 1927 crop accepted for export. The same may be said of buckwheat honey from European Russia. Only three floral "sources" were recognized: basswood, buckwheat, and "flower" honey. The first two are self-explanatory, while the last class includes honey from all sources other than basswood and buckwheat. If blending is resorted to in the case of "flower" honey, it is possible to prevent the foreign market from acquiring a taste for a honey too limited in quantity to supply a regular demand.

Four color grades are reported: white, light amber, amber, and dark. About 45 per cent of the 1927 crop accepted for export fell in the first grade. Less than 8 per cent of this white honey came from regions other than Siberia and the Far East. Dark

honey formed nearly 29 per cent, apparently being derived mostly from buckwheat. The distribution between the two other grades was roughly equal.

The results obtained in the trial exportation in 1926-27 led the Soviet Government to decide to export 2,200,000 pounds in 1927-28. In the previous year the export was about 1,400,000 pounds, valued at $195,000. Of the total, Great Britain received 789,300 pounds. The proportion of this which was reexported is not mentioned. Germany received 117,000 pounds by direct shipment. Considerable amounts of Soviet honey were exported to certain countries which receive very little honey from the United States for the most part. Thus 206,400 pounds were sent to China; 146,400 pounds to Japan; 42,700 pounds to Turkey; 41,200 pounds to Czechoslovakia, and 37,000 pounds to Austria. Several other countries also received Russian honey.

It will be interesting to note the relative competition between Russian honey and New Zealand honey, since each is exported under Government supervision. The amount of honey now being exported from each of the two countries is approximately equal.

Turning from the commercial to the scientific side of apiculture in Russia we find a development which compares favorably with that in any other country since the era of modern beekeeping. Thus one of the oldest, if not the oldest, existing apicultural experiment station in the world, the Izmailoff Experimental Apiary, founded in 1865 at Moscow, is a Russian institution. The early date at which Prokopovich founded his school does not make Russia a pioneer in the matter of bee schools, however, since more than fifty years earlier the Empress Maria Theresa of Austria had set Janscha at his task as head of the new Government bee school in her country.

The well known scientist, Professor Koshevnikov, was in charge of the Izmailoff station from 1910 to 1920. His predecessor, F. S. Mochalkin, served for twenty-five years. Among other directors was N. V. Nasonoff, whose name is associated with the scent glands of the honeybee. He served from 1878 to 1885. The present director is A. Y. Titoff, who has served since 1921.

The activities of the Izmailoff station have included research work, giving beekeeping courses, issuing bulletins, and publishing journals. At the present time the station is publishing "Pchelovodnoe Delo," founded in 1920 and one of the leading Russian bee journals. There are several buildings at the station, including a laboratory with library and

Display your Honey Perfectly

Dependable Service

On Standard Sizes

Our fluted honey jars are made as per specifications of Standardization Committee of the American Honey Producers' League

Distributed by

Dadant & Sons, Hamilton, Illinois

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Working your Wax into foundation for you for cash, and Dittmer's Non-Sag Brood Foundation

Our Non-Sag Brood Foundation has given absolute satisfaction the past season. Not one word of fault, but any number of commendations. Our foundation business doubled last season, and we are ready to book your orders now. Write us for samples and prices for early orders, which will in all cases be as satisfactory as the quality of our foundation. We furnish a full line of hives, sections, and all other supplies.

GUS DITTMER COMPANY, Augusta, Wis.

MOORE'S STRAIN

Away back in 1879 I commenced rearing Italian queens with the object of improvement constantly in view.

By careful selection during all these years I have succeeded in producing a strain of three-banded, leather-colored Italian bees, known as **MOORE'S STRAIN OF ITALIANS**, which has won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.

Mr. A. K. Whidden, San Jacinto, Cal., says: "In 1913, 80 per cent of the bees in this district died of European foulbrood. I had an apiary of 60 colonies headed by daughters of your queens in which I did not lose a colony, and in 1914 they made 360 pounds per colony.

"In 1917 I bought 12 queens of you and introduced them to diseased colonies. Four of them became too weak to recover, and they all got rapidly worse until it looked impossible for any of them to recover. In eight of them, as soon as the young bees from your queens began to hatch, the disease began to disappear. They cleaned up and stayed clean."

I am now filling orders by return mail.

Untested queens, $1.00; 6, $5.00;.. 12, $9.00. Select untested, $1.25; 6, $6.00; 12, $11.00. Safe arrival and satisfaction guaranteed. Circular free.

J. P. MOORE, Morgan, Kentucky

BEEWARE
EXTRACTORS
American Cans and Pails,
Glass Honey Jars, Wired Foundation.
Catalog for the asking.
If you wish prompt service, write
B. F. SMITH, Jr., Fromberg, Montana

For Over 50 Years

Beekeepers in many lands have been pleased with this most important tool in Beekeeping. Your Bingham Smoker is offered for sale by numerous dealers.

Insist on the Best

A. G. WOODMAN CO.
Grand Rapids, Mich.

MOTT'S NORTHERN BRED ITALIAN QUEENS

We wish to thank our many customers. We appreciate your business.

Note the swarming disposition of our bees. In 1927, we had one prime swarm and two from supersedure. That fall, because orders took all our queens, we had 50 colonies left over with old queens. So, in 1928 there were 13 swarms, 3 prime and 10 from old queens. In 1929, three swarms, one prime and three from cell rearing colonies, to date--- without cutting any cells for control. This record is taken from over 200 colonies.

We guarantee purely mated queens or replace free. Why buy hybrids.

Select queens $1.00 each; $5.75 for six; $11.50 for 12; $45.00 for 50. $85.00 for 100.

Select tested queens, $2.00.

Nine years, not a single case of disease.

Safe delivery and satisfaction guaranteed.

E. E. MOTT & SON, Glenwood, Mich.

lecture room, a historical museum, a scientific museum, a small auditorium, and an office building. The work which has been accomplished at this station, or at the Tula Apicultural Experiment Station under the leadership of F. A. Tunin, assisted by A. S. Mikhailoff, or by any of the other agencies now operating in the U. S. S. R. to promote scientific apiculture, holds much of interest to all beekeepers who are bee students in the real sense.

Consider the Housewife in Advertising

In an article by G. H. Cale, on page 613 of the December number, the real case of honey's position on the market is discussed.

If we stop looking at honey from our point of view and instead look at it from the viewpoint of our great buyer, the housewife, we will immediately see why we have a marketing problem. In this country, and I believe in all others, the big problem for the housewife and mother is to satisfy the family's call for food with the limited amount of money that is available for this part of the household expenses.

The family will call for sweetness in some foods, and her job is to buy the sweetening agent and get the best value that she can. Here is the point where her ideas and ours differ. Her idea of the value of honey is quite different from ours. So also is her idea of the value of sugar.

The usual view that she has of honey is, "Some is very nice, some not so nice. It is sweet, sticky stuff and (mentally comparing it with sugar) it is very dear." Her idea of sugar is, "Cheapest sweetening there is; very convenient to use; they say too much of it causes decayed teeth." Our idea of honey is vastly different. We think of its mineral salts, its vitamin content, its flavor, its being a "mineral food." We think of the experiments of the Fraunfelder Institute. We think of Dr. Lubzinger, who says honey in hot water is as stimulating as alcohol. We think of other statements about honey being alkaline in final reaction, of its being absorbed in digestion as water is absorbed, of its being a tooth-building food, and of sugar being a tooth destroyer.

In short, when thinking of honey, we register all the impressions made in years of reading, even though the articles that made the impressions are completely forgotten. We think also of all the unfavorable things we have read of sugar, and we think not of price at all.

When we will produce honey at a price to suit the housewives' needs, and when we will consider her needs in advertising honey, we will find there is no market problem. It is not easy even to think about honey production at prices which will allow it to be retailed in competition with sugar, nor is it easy to plan or pay for an advertising campaign that will educate the housewife in food values; yet we can do it and finally will find we must do it.

One of the first needs is to have a specialist study honey as a food; until that is done we have no definite information that we can use to help the housewife to understand the food value of honey.

From what has been stated in the bee journals at different times, I believe there is sufficient food value in honey to have it used exclusively, even at present prices, but before the housewife will buy it at present prices she will need to believe the food value of honey to be as high as we beekeepers have been taught to believe.

John H. Rosser,
Queensland, Australia.

Australasian Bee Men Visit America

At a time when American beekeepers and bee supply men were looking forward to the peak of the season, this office received a pleasant visit from Messrs. G. T. and W. S. Pender, members of Pender Brothers in Australia. Located in the Southern hemisphere, they were enjoying their slack bee season by a trip around the world, arriving in the United States. They expected to sail from New York for England and then return home via the Mediterranean.

Pender Brothers are very large manufacturers of bee supplies of all kinds, as well as manufacturers of a large line of building material. Mr. W. S. Pender, the elder, is editor of the Australasian Beekeeper and has been for some thirty years; the foremost bee journal in the southern field. Mr. G. T. Pender, the younger, is manager of their extensive factory employing some sixty-five men.

Australia possesses immense natural resources which have not been developed, and as a consequence beekeeping, already a flourishing occupation there, should increase materially in the course of the next score of years. Much of the honey is sold in the British Isles, where a selling organization is located.

Australia is much better organized cooperatively than we are here in America, both as to producers and as to labor. Government subsidies and government restrictions are the rule rather than the exception.

Ultra-Violet Rays—and Honey

By Felix J. Koch

Students of apiculture, the world about, are focussing their attention on the University of Cincinnati at the present time.

A young Russian emigre, a post-graduate student of the institution, is doing extra-intensive work with bees in experimental hives erected on the college grounds.

This man, Isay Balinkin by name, is attempting to prove conclusively that the ultra-violet ray may be introduced into honey raising with profitable results. Careful focussing of these rays upon the bees in his care has produced a certain stimulus to the bee-nature, from which tremendously more honey than ever before has come, as quick result.

To just what further lengths it will do to play such rays on the bees then, and to just what limits the honey-making proclivities of the insects will be brought, Balinkin is not as yet prepared to state.

The experiments however, are so novel, and the young experimentor is so super-enthusiastic at results achieved so far, that bodies of students of both sexes are always ready to gather, when he is prepared to demonstrate achievements so far, and hear exactly what it may be of bee life by blue light he may then have to relate.

Our pictures show Balinkin with an audience of co-eds on the college campus.

Balinkin, it may be added, incidentally, has given much attention to the new attempt among the scientists to isolate the atom—to get **one** atom of **what** it may be, by itself. If the physicists ever do this, however, he believes it will be impossible to photograph that atom ever, and this because the very nature of the laws of light that must carry the image from the atom to the plate will for all time prevent.

That true, he is giving his own attention to the work with bees here.

Beekeeping in Saskatchewan

We are in receipt of the report of the provincial apiarist, R. M. Pugh, for Saskatchewan, from April 30, 1928, to the same date 1929.

The winter losses appear to be quite large, especially out-of-doors—41 per cent out-of-doors and 19 per cent in-doors. As beekeeping is just beginning in the province, it is quite likely that the beekeepers will learn more about it and will succeed better in the future. As sweet clover is becoming one of the main crops in western Canada, beekeeping is likely to take great extension there.

MACK'S QUEENS (3 Band Italians)

Our big fall honeyflow is now on and our bees are building the FINEST cells we ever had. We have just started 400 more mating nuclei and will be better fixed than ever to get our High Quality Queens to you in a hurry. You will find our NORTHERN BRED Queens HARDY, GENTLE and VERY PROLIFIC and quoted at a price (quality considered) that will save you money. Will tell you some day how we raise better queens and for less.

Requeen now with Mack's Queens and see the difference

Prices for September and October

60c each $6.60 a dozen $50.00 a hundred

Every sale a satisfied customer or money back

HERMAN McCONNELL

(The Bee and Honey Man)

ROBINSON ROUTE 2 ILLINOIS

W. R. PERRY'S 1929 LOW PRICES ON QUALITY

HONEY MARKETING EQUIPMENT

We have one of the most complete stocks of honey containers ready for the bee-keeper in the middle west. Omaha is situated so that we can give you prompt service and at the lowest transportation cost.

FRICTION TOP PAILS AND CANS

Each year our business in friction top containers is much larger than the year previous. We picked out the quality products and have stuck with them. Again, we offer American Can Company pails and cans. "Canco" sets the standard and their cans are best. Friction top pails and cans are packed in dust proof cartons. This assures you they will reach you in clean and perfect condition at the lowest transportation cost. If you want quality pails at the lowest cost send us your order.

			Per Carton	Weight
2½-lb. cans	100	in dust-proof carton	$4.00	31 lbs.
5-lb. pails	50	in dust-proof carton	3.15	28 lbs.
5-lb. pails	12	in re-shipping case	1.00	10 lbs.
10-lb. pails	50	in dust-proof carton	4.65	46 lbs.
10-lb. pails	6	in re-shipping case	.75	7 lbs.

FIVE GALLON (60 lb.) CANS

"Canco" cans. This year with the 2¼" opening, which are easier to fill and empty. These cans are made from 107 lb. tin plate throughout, all seams are soldered. They are the best square cans on the market. Special prices on quantity orders. Strong wood case with cleated ends.

	1 to 9 Cases	10 to 49 Cases	50 Cases or More
1 60-lb. can in wooden case	$0.70	$0.65	$0.60
2 60-lb. cans in wooden case	1.10	1.00	.98

60-lb. cans in bulk, crated in lots of 20 or more cans, 36c each.

TALL CLEAR GLASS JARS OR DIAMOND "I" HONEY JARS

Special tall, white, clear honey jars

24 14-ounce honey jars in re-shipping cases ... Per Case, $0.98
24 8-ounce honey jars in re-shipping cases ... Per Case, .75

DIAMOND "I" HONEY JARS

24 16-ounce honey jars in re-shipping case ... Per Case, $1.10
22 32-ounce honey jars in re-shipping case ... Per Case, .80

OUR GUARANTEE Every container that we sell is guaranteed to give complete satisfaction and to be perfect in every respect.

Carload stocks available at all times during the selling season.

Prices in this list subject to change without notice.

W. R. PERRY CO., 414-416 South 11th Street, Omaha, Nebr.

"MAGNOLIA STATE" QUEENS

HAVE PROVEN ESPECIALLY POPULAR THIS SEASON

DON'T! DON'T!! DON'T!!!

let a single colony approach winter with a doubtful old queen

You may be contemplating the purchase of some package bees next spring; and we know of no better way for you to acquaint yourself with our stock than by ordering a few queens this fall.

Queen-rearing is our livelihood, our vocation, our art, in which we take great pride. And when it comes to SERVICE, we give it FAULTLESSLY.

"Magnolia State" typifies our queens among a myriad of others; assurance enhanced that the quality will be the highest. Covered by our usual guarantee.

Long as the season lasts—any number.

JENSEN'S APIARIES Crawford, Miss.

Mention the American Bee Journal When Writing Advertisers

LEAHY STANDARD BEE SUPPLIES

Quality

Service

Satisfaction

Guaranteed

Our 1929 Catalogue is ready for mailing.
Write for one today sure.

LEAHY MANUFACTURING COMPANY,
Higginsville, Missouri

Better Late Than Never

Queens introduced early in September have time to get in some good licks before winter. Be sure to have every colony headed with a young prolific queen of a known honey gathering strain. ROOT - QUALITY three-banded Italian queens will please you.

Queen Prices:

	1	10	50	100
Untested	$1.10 ea.	$1.00 ea.	85c ea.	75c ea.
Tested	2.25 ea.	2.00 ea.		
Sel. Tested	5.00 ea.			

Note: Untested queens are young laying queens of this season's rearing

Our new mailing and introducing cage helps to make queen introduction more safe and sure.

The A. I. Root Co.
Westside Station
Medina, Ohio

Root QUALITY BEE SUPPLIES

GET OUR PRICES

Before Buying Beekeepers' Supplies

For your convenience we have included a coupon with this ad. Use it or write us a letter.

Our Guarantee

All goods purchased may be returned if unsatisfactory and money cheerfully refunded. No questions asked.

Our Service

While we ship all over the country, we can give special service to those located in the East—New York, Pennsylvania, New England, and Atlantic Seaboard states.

W. T. FALCONER MFG. COMPANY
FALCONER, N. Y.

W. T. Falconer Mfg. Co., Falconer, N. Y.
Gentlemen:
Without obligation on my part, please quote prices. I have _____ swarms.
_____ Hives _____ Sections
_____ Supers _____ Br. Fdn.
_____ Frames _____ Super Fdn.
_____ Bodies _____
Name _____
Town _____ State _____
Address _____